100% ACORN

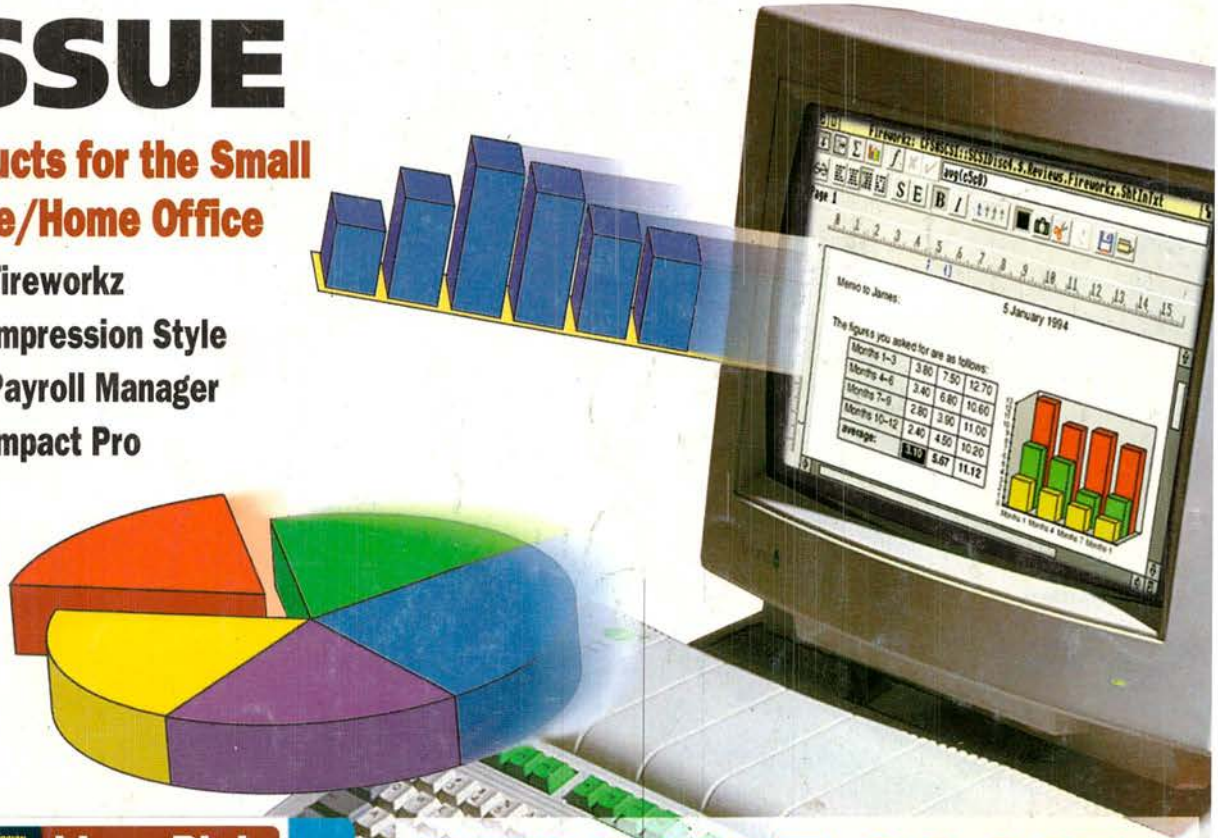
Covering ALL Acorn machines

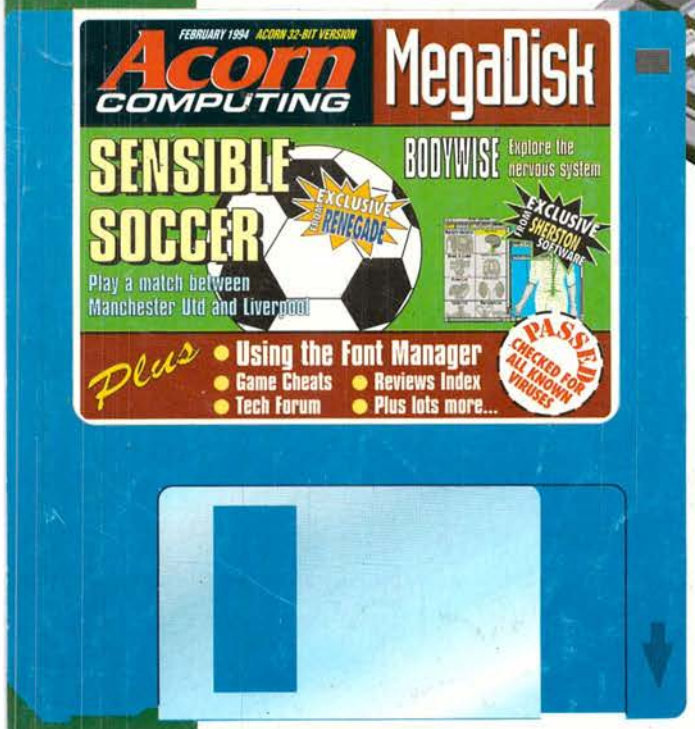
Acorn COMPUTING

SPECIAL SOHO ISSUE

Products for the Small Office/Home Office

- Fireworkz
- Impression Style
- Payroll Manager
- Impact Pro





SENSIBLE SOCCER

Loads of un-serious fun

MEGADISK POWER

- Sensible Soccer
- BodyWise
- Using the Font Manager
- Game cheats
- TechForum
- Reviews Index
- Plus lots more...

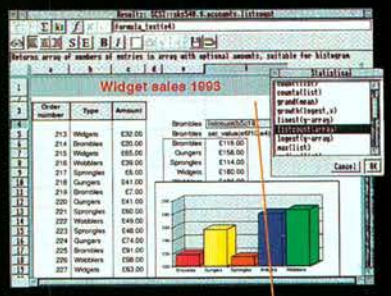
europress ENTERPRISE
9 770967 525038 02
FEBRUARY 1994 Vol.11 No.13 £2.95 HFl 14.50

ARCHIMEDES • A300 SERIES • A400 SERIES • A3000 • A3010 • A3020 • A4000 • A5000

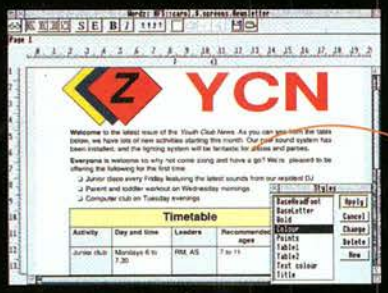
productivity and integration

Resultz is the power-packed spreadsheet that gets the answer first. Whether you're working with statistics, finance or arithmetic, Resultz and its unequalled range of functions can provide the answer easily and quickly. Boost your productivity for £99.

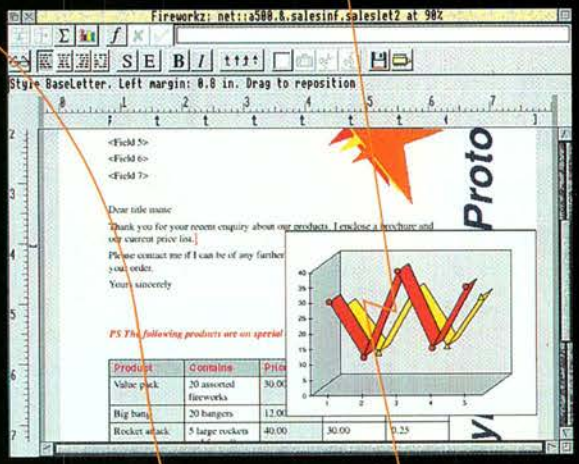
resultz



wordz



Wordz is the dedicated word processor, feature-packed but easy to use. Click on a button or drag an icon to design good-looking documents. Text and tables are easily styled, live on the page. At £79 it's the affordable option for documents with impact.



Fireworkz combines the power of Wordz and Resultz into a single, truly integrated program. Work on numbers, formulas, text and charts within a single document, using the same easy interface featured in all members of our program family. A complete working environment for only £149, or upgrade from PipeDream, 1st Word Plus, Impression, Easiwriter, Eureka, Advance or Schema for £99.

fireworkz

Colton Software is a leading name in RISC OS software. Our commitment to our users is unequalled. Educational users can benefit from competitively priced site licences; all users get our renowned free technical support. Prices are special offer prices, excluding VAT, and are valid until January 1994. Write or phone for free brochures and demonstration disc.

COLTON software

2 Signet Court, Swann's Road,
Cambridge CB5 8LA
Telephone 0223 311881
Fax 0223 312010
Email info@colton.co.uk

All trademarks acknowledged

March issue – on sale 7 March 1994

SOHO

SMALL Office/Home Office, the new computer buzzword for the Nineties, we find out what new programs you can use to help you run your business from your own Acorn computer with a look at Impression Style, Fireworkz and Payroll Manager. Starting on Page 28.

REGULARS

Comment 17
The concept of the desktop was designed to help users but has it become just another hindrance? Steve Turnbull looks at the wall of words.

News 19
All the latest news of products and events taking place in the fast changing world of the Acorn computer.

Public Domain 51
Teri Paul is back again with her pick of public domain and shareware programs to enhance your computer.

TechForum 63
Are you an expert programmer? This new hints and tips series is just for you with ideas and algorithms to help you work.

Problem Solved 69
Our technical editor opens his mail and shares the secrets behind some of those tricky hardware problems.

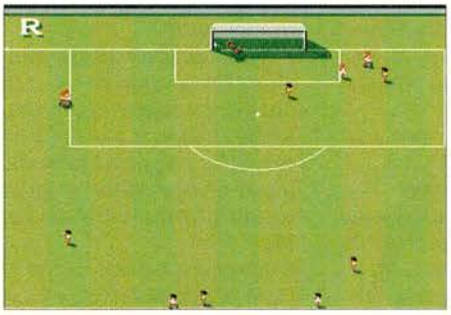
Databay 78
Game gossip and up-to-the-minute news picked up by HAL, our electronic ear to the ground.

Body Building 95
Mike Cook finishes off his computer-monitored telescope with a look at the boxes, connections and possible enhancements.

Letters 104
This is your opportunity to voice your news, ideas and views on everything in the Acorn world from viruses to joysticks.

FEATURES

MegaDisk 4
Check out what's in store for you this month on the best cover disk available for the Acorn 32-bit RISC OS range.



32-bit Subscribers 8
Our special extra subscriber's disk is jam packed full of goodies so find out what's on it this month.

BBC Disk 10
Full details on what's on the subscription disk for the 8-bit BBC Micro this month, and how to use it.

The Font Manager 65
Another in our occasional programming series on how you can use the capabilities of RISC OS in your own programs.

Graphics 88
Mike Goldberg turns himself inside-out with another look at morphing and his new improved version.

REVIEWS

Impression Style 28
The first of the two new Computer Concepts' word processing/desktop publishing releases are here. We take a look at what the Style can give you astakes the price point from Impression Junior.

Learning Curve 33
We survey the latest in educational software for the Acorn computers:
- Swimming
- The Spoken Word
- Music Box
- Dinosaurs

Fireworkz 43
The new package from Colton Software is a truly integrated package, we see what it can do and how easy it is to use.

Payroll Manager 46
The weekly or monthly payroll is the bane of any small business but this new package should make it easy, we check it out.

Short Reviews 54
We check another selection of utilities including:
- Vigil
- ASM_Help
- KleinFS
- Notes
- Larger

Rhapsody 3 59
We discover whether the extra facilities of this new version are worth an upgrade or are they just gilding the lily?

Screenplay 72
All systems go as we look at the latest for 32-bit Acorn machines:
- Sensible Soccer
- Heimdall
- Creator II

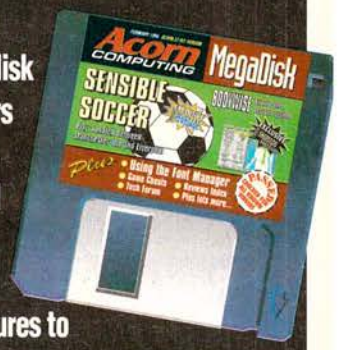
Draw Aid 2 91
Produce complex drawfiles even more easily with the new version of this impressive package.

Impact Pro 93
We explore the ins and outs of this latest update of this easy-to-use and low cost database system.

ColourCard Gold 101
Check out the power and the colours that this expansion card can supply.

THE MEGADISK

Britain's best Acorn cover disk contains hours of fun and a host of useful utilities linked to our editorial features to make the magazine come alive on your desktop!



Full details about the packed Megadisk – see Page 4.

- **Sensible Soccer** It's a funny old game
- **Bodywise** Top to toe with the body parts
- **Databay** More cheats than you can shake a stick at
- **Font Manager** Example programs for using Fonts
- **Reader's programs** Excellent ideas made into great programs

Subscribe now! – See page 31

SUBSCRIBE to *Acorn Computing* and you'll get an amazing value-for-money deal that beats all our rivals: Not only do you get a whole year's-worth of issues for LESS than any other Acorn magazine, 32-bit owners get TWO disks every month.

See Page 31 for details of this unbeatable offer.

If you have a BBC Micro, *Acorn Computing* is the only newsstand magazine that still supports you. Every month we have complete programs written specially for you and your computer.

To subscribe turn to Page 31.

GET YOUR NEWSAGENT TO RESERVE YOUR COPY NOW – SEE PAGE 48

The MegaDisk

What's on this month

- Bodywise
- DataBay
- Font Manager
- Miscellany
- Review Index
- Sensible Soccer
- TechForum

Sensible Soccer: Man Utd vs Liverpool

This special version of Renegade's (071-481 9214) Sensible Soccer pits Manchester United against Liverpool. As soon as you load the game the two teams will run on to the pitch and prepare to do battle as the crowd cheers.

This version is for one player and can be played with keyboard or joystick. You are in control of Manchester United and the relevant player to move will be the one with his number above his head. Play continues until the first goal is scored, then the game ends. You can experiment with different techniques all of which are available to you in this version.

Try pressing the fire button and then re-directing the ball with the directions controls or try directing the player and tapping fire quickly to pass the ball to the nearest player in that area.

You can also kick the ball along the ground or lob it into the air. Why not attempt to head a lobbed ball as it passes over a player by pressing fire or slide tackle an opposition player by running towards him and pressing fire?

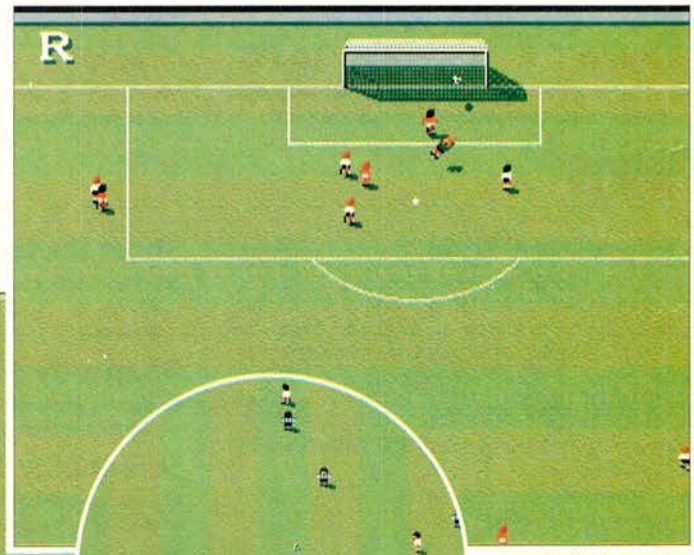
However, beware of the Yellow Card or you might give Liverpool a penalty kick at your goal ...

When a goal is scored there is an automatic replay, the teams go back to the centre and the score and scorer are shown. Press R during the replay and you'll get a slow motion version. The game then restarts. If you fail to score any goals you'll go the full 90 minutes. You can bring on the Manager's Bench whenever the ball is out of play.

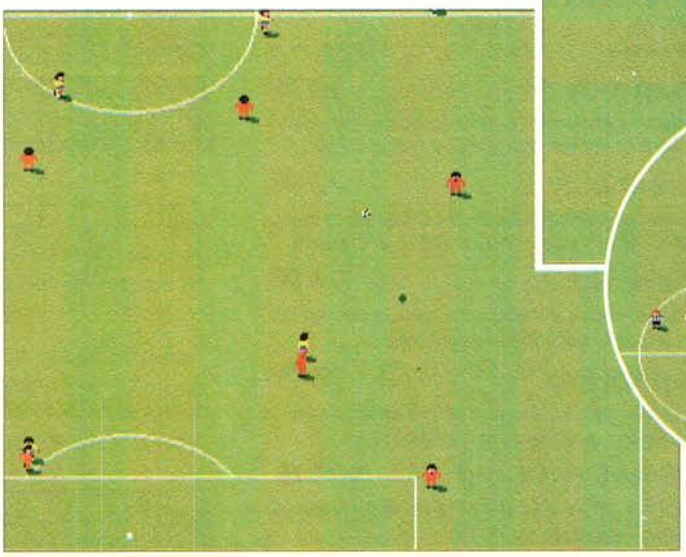
The full version of Sensible Soccer costs £25.99 and you can read the review on page 73 of this issue. In the complete game you can edit team formations, exchange members and alter team colours for home and away matches.

There are 172 teams in all including 40 national, 64 international club teams and 64 custom teams – players or computer-controlled. You can set up a 64-team League or Cup Competition with two legs per round and six rounds per competition. But if you prefer you can just play *friendly* matches on a one-to-one basis.

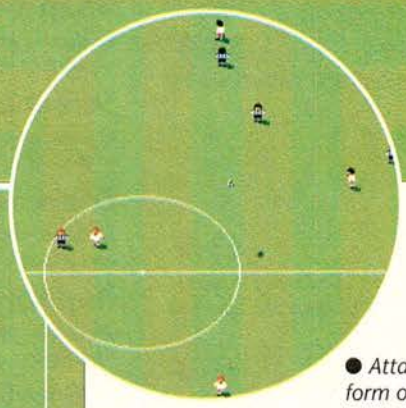
Controls	
Left	Z
Right	X
Up	"
Down	?
Fire	Return
Options	
Replay last few seconds	R
Pause on/off	P
Leave match and start again	Esc
Bring on Manager benches	Up/down arrow keys
Return to desktop	Control+Escape



● *Action replay for complete detail*



● *On the head, John*



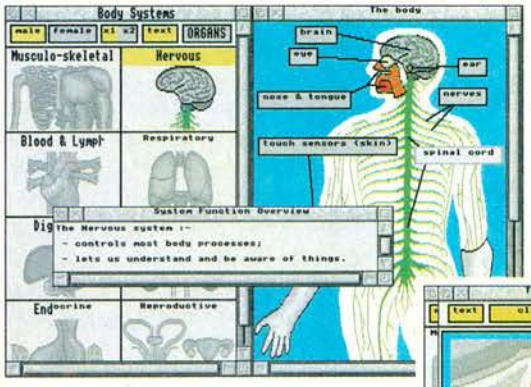
● *Attack is the best form of defence*

Bodywise: Explore the nervous system

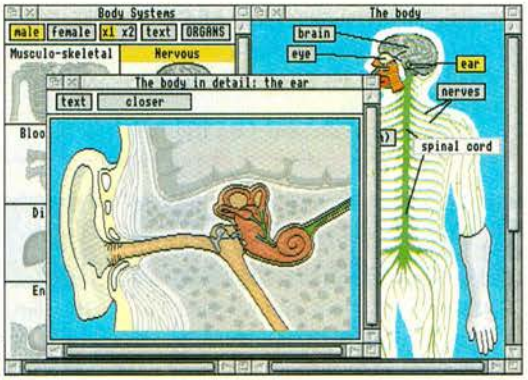
Award-winning Sherston Software (0666 840433) have prepared a special edition of their new package BodyWise just for you. This is an animated database of the human body aimed at top primary and lower secondary school aged children.

By clicking on the part of the body – in this version the nervous system – you can see how it works, look at a closer view, cross-section and animation of certain features. You can probe deeper and deeper into Bodywise accessing accurate illustrations, instructive animations and informative text.

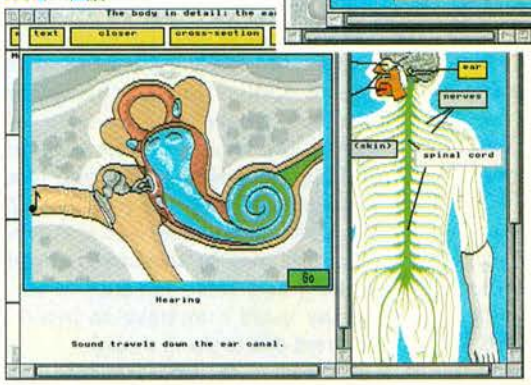
The full package covers all the major body systems with a setup option to allow teachers to choose from systems that are available. With the program comes a booklet of classroom ideas, two sets of Body Search cards and a set of study sheets. The price is £39.95.



● *Discover the nervous system for yourself*



● *You can delve into deeper...*



● *...and deeper detail*

Crypt: Lock it or lose it

This is a powerful desktop encryption utility. To start a session, load it up and click with select or adjust on the icon to input a password. The Default is *Default* and remember that the password is case sensitive.

Now drag a file on to crypt and after a short pause, it will offer you the opportunity to name the encrypted version in usual RISC OS style. When you want to decode it, simply drag the encoded version on to the icon, and the original file will be recovered as long as the password used during encryption is the same as the one you put in.

Remember too that once a file is encoded it will not compress very well, so archive your data before using Crypt on the single archive file.

If the passwords are different, an error will be generated – different CRCs – but even if some hacker removed this error, the resulting file would be garbage.

I will not go into detail about the encryption used, suffice to say that no pattern will be revealed if the original file contained large blank sections, and decoding of a file without knowing the password is an *extremely* difficult task. My computer would take a trillion (10^12) years (maximum) to blindly try all possibilities on a 300k file.

Paul Carpenter

Getting started with the MegaDisk

THE programs on this disk are stored in a highly compressed format which sometimes enables as much as 1.6Mb of programs and data to be stored on a 800k floppy disk

The procedure for running the programs is very straightforward and does not require learning any special methods or techniques.

Switch on your Acorn micro, put the disk in the drive and click the drive icon. Now double-click !ACmenu – there's a short pause while it scans the archive then it displays a window of the contents. You can treat this new window like any other one for viewing disk contents, and run programs and open directories by double-clicking them.

Large programs must be unpacked by dragging on to a separate disk before being run. Some may have an !Install program that will do it for you.

We recommend that you always read the !ReadMe files or access the help information via the Help button.

FAULTY DISK?

If your cover disk has a physical fault – doughnut won't rotate in the sleeve, disk errors and so on – please return it for replacement to:

PC Wise Ltd
Dowlais Top
Business Park
Dowlais
Merthyr Tydfil
Mid Glamorgan
CF48 2YY

If there seems to be a fault with one of the programs please contact us by post describing your machine set- up and exactly what happens when you run the program.

Next Month

Here's a taster of what to expect on the March *Acorn Computing* MegaDisk – on sale 7 March:

- **Simon the Sorcerer** Sample of fantastic adventure from Gamesware
- **The Spoken Word** Early reading package from Wyddfa

PLUS much much more

Make Font: BBC font converter

The program !mkBBCfont converts files of type FF7 (BBC font) to sprite files containing one 8x8 mode 0 sprite per defined character, named according to character code.

For example, A becomes a sprite with the name 65. It also does the reverse, so once you have edited the font as a set of sprites, !mkBBCfont can convert it back to a BBC font file.

To do this click Select on the application icon to generate sprites from the current system font definition, or drag a BBC font file or Sprite file on to the application icon. Next drag the converted file to where you want it.

The example font FatASCII was produced in this way. It's a little strange, but quite readable in !Edit windows with a line spacing of two pixels.

Peter Harris

To/From BMP: PC graphical interchange

BMP is the format mainly used for graphical interchange in Microsoft Windows environments. Since RISC OS users may also use PCs on a regular basis, it's handy to be able to convert between the native formats on RISC OS (Sprite and Clear) and BMP.

The ToBMP application will convert Sprites and certain types of Clear files (8 and 24bpp) to the BMP format. The resulting file can then be placed on a DOS format disk and used on a PC running Windows and associated applications. This application is complemented by the FromBMP converter.

David Thomas

Add_Sprite: Increasing your sprite pool

This simple utility sits on the iconbar, ready to accept sprite files to add to the wimp sprite pool. For example, it's useful when designing a set of sprites for an application or customised desktop where you want to see consecutive versions of your creations.

If the file being transferred is an application, its !Sprites (or !Sprites22 file where appropriate) is used instead. Also, files may be transferred directly as long as a scrap directory is set – floppy users may have to insert a different disk to do so though.

Of course, its only function is to perform *IconSprites <Filename>, but where the filename is long or the fingers not adept Add_Sprite is useful. Enterprising programmers could change the OSCLI command to perform some other functions, for example making CSD or loading toolsprites, to name two.

Paul Carpenter

PathMerge

PathMerge is a utility for combining the individual paths (lines, curves and moves) in a Draw file to make a single path containing all the elements of the individual paths. So, for example, if you were to create two separate curves in Draw and then run the resulting file through PathMerge, you would end up with a single object containing two curves separated by a move.

Although it doesn't sound particularly amazing it's highly useful for creating unusual objects. One such object is a mask – a shape with a bit cut out – which is hard to create by hand in Draw.

PathMerge is also useful for saving space on drawfiles – at least ones which don't need to be coloured. Take a look at the supplied demo files Demo3a and b.

When you have a file you want to process drag it to the PathMerge icon on the iconbar and a save box will pop up. Drag the file icon to a directory viewer or type in a filename and after a short-ish delay the file will appear in that directory. Clicking with Adjust on the iconbar will open the last save box, if there was one.

The output file from PathMerge will be stripped of all non-path objects and will contain a single path object made up of every path object from the input file. This object will inherit all its characteristics from the first path PathMerge finds in the file.

David Thomas

Lemmings 2 Demo

The instructions to run Lemmings 2 from the January floppy disk were a little vague. If you have had problems, carry out the following on your dearchived version:

- Hold down SHIFT and double-click on the Lem2Demo icon
- Shift + drag Disk 3 inside the window which has appeared
- Double-click on Lem2Demo in the usual way to run

Programs from the magazine

- **Databay:** This month there are Hacker cheat modules for: Air Supremacy, Aldebaran, Blowpipe, Elite, Grievous Bodily 'Arm, Guile and Lost Temple. Plus a program, !SRKeys for Stunt Racer 2000.
- **FontManager:** Example programs showing you how to use the Font manager. This accompanies Ben Summers' article on page 65.
- **TechForum:** An updated version of the Watford Electronics Graphic Tablet fix program for all versions of the Tablet module.

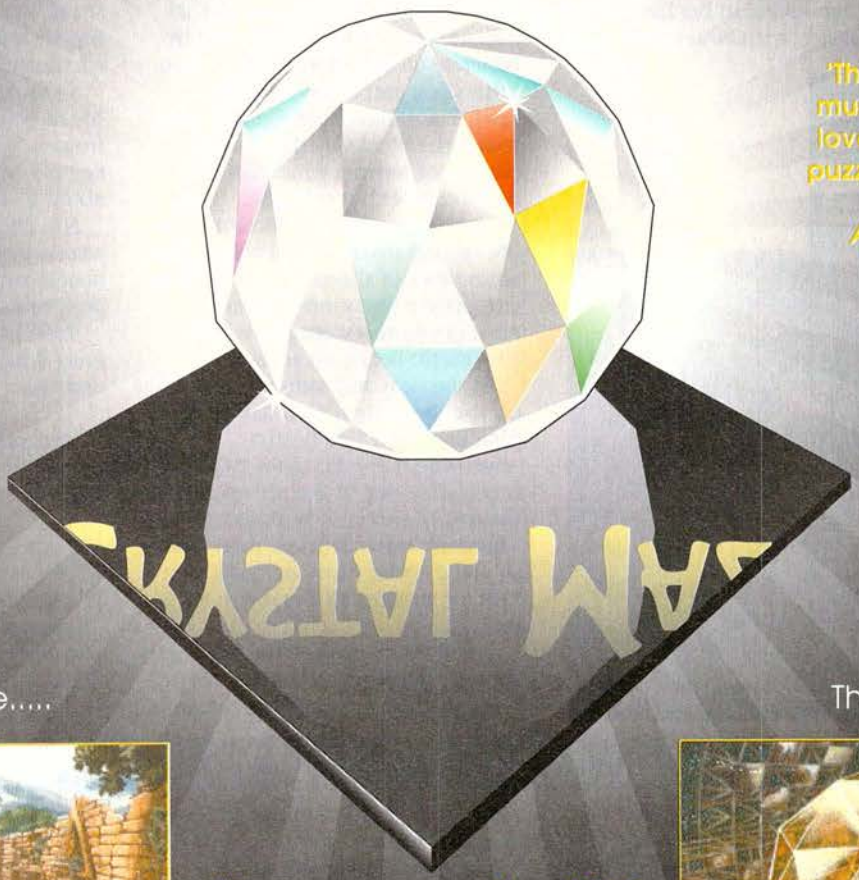
'The Crystal Maze is fantastic. The graphics and sound are stunning, the puzzles and games are very playable and challenging, and the presentation and packaging are of the highest standard. What's more, it provides all the excitement and entertainment of the TV show.'

RISC User, December 1993

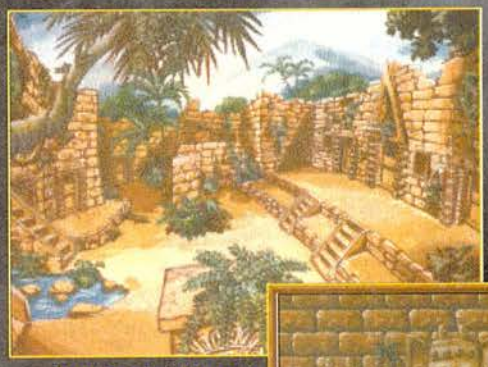
THE CRYSTAL MAZE

The fastest selling Acorn product Christmas 1993 Available now!

'The Crystal Maze is a must for everyone from lovers of mind-bending puzzles to joystick-frenzy enthusiasts'
Acorn Computing October 1993



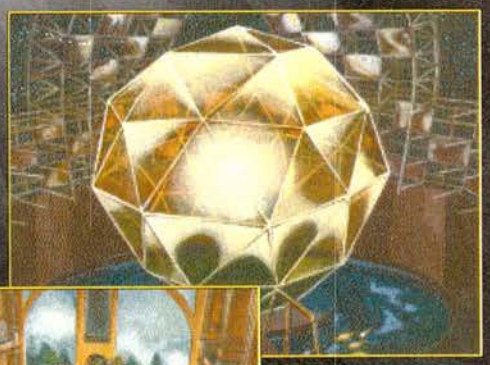
Into the Aztec zone.....



The Crystal Maze is available exclusively for Acorn 32 bit computers.

Now you can play TV's No.1 Adventure Game

The final challenge!



Try your hand at a game of skill ....

The Ocean zone contains new challenges ....

The Crystal Maze is a Chatsworth Television production for Channel 4 based on ideas by Jacques Antoine © 1990

£39.95 (inc VAT) from
Sherston Software
Swan Barton, Sherston,
Malmesbury,
Wiltshire SN16 OLH
Tel 0666 840433
Fax 0666 840048

SHERSTON

Please send me ___ copy of The Crystal Maze® at £39.95 inc VAT

Name _____ Visa/Access: _____

Address _____

_____ Exp. Date: _____

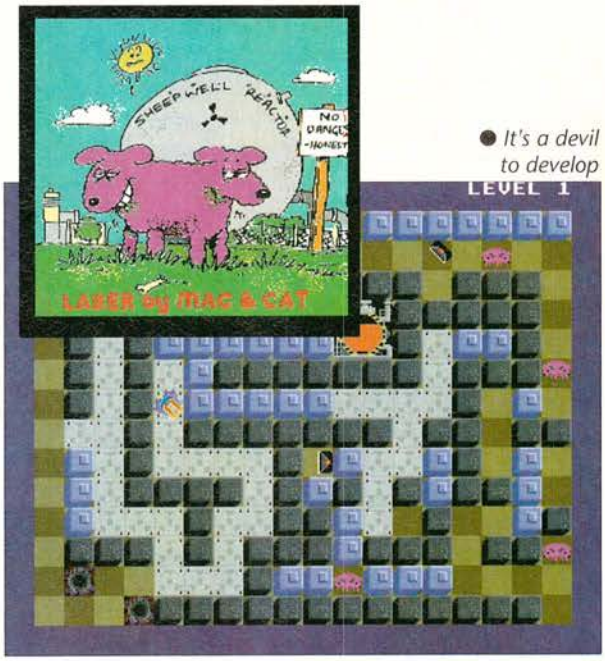
_____ Post Code _____ Signed _____

This month

- 8-bit listings
- Laser Game
- Laser Editor
- PD Bonanza

Laser brain

There appears to be a problem with the Sheepwell reactor – it keeps going critical and in hot weather melts down. Now you can play the role of *Chin-up* Bill in his Laserdrive. He is the only man who can stop a potential catastrophe by firing a laser bolt directly into the heart of the reactor thus causing a controlled (!) destruction of the whole plant.



● *It's a devil to develop*

Of course it's not as easy as that because the reactor is protected by concrete blocks – some immovable, others you can destroy with your laser. You'll have to deflect the laser round the blocks by the strategic placing of mirrors which are not only portable but rotatable.

Naturally, as there is no threat to life around reactors, you will find an abundance of sheep which for some completely unconnected reason glow phosphorescent green when the reactor begins to go critical.

As the heat and radiation builds up the sheep then turn day-glow pink and grow two heads – government experts agree that this is probably due to the nitrogen in the soil or excessive high spirits. This indicates imminent meltdown so you'd better hurry or that's mutant mutton off the menu for a few weeks.

If you fail to destroy the reactor in time it obliges by self-destructing, but takes you with it. Don't worry if your hair falls out and your gums turn blue, it just reflects a poor northern diet. However, if you can destroy it the authorities then sneak away and build an even more ingeniously protected reactor just as reassuringly safe as the last one.

So once again you take your half-life in your hands to save the planet from a disaster totally unlikely to occur – or if it does you'll never hear about it anyway.

NB: This game runs much too fast if you have an ARM 3 machine so you'll need to switch off the cache. To do this press F12 and type:

```
*Cache off
```

Press Return again to get back to the desktop.

Controls

Left	Z
Right	X
Up	"
Down	?
Fire	Return
Pick up/Drop mirror	Alt
Rotate mirror anti-clockwise	A
Rotate mirror clockwise	S

Mike Goldberg (and cat)

Laser: The editor

Should you find that you have had enough of the set screens, why not try your hand at editing a few of your own. Load the editor by doubling-clicking on !EDITlaser icon to load the program.

● *Zap the core before it blows*

When loaded an empty background screen will appear and you'll be asked if you want to load a screen or not. Type in a number from 1 to 8 if you wish to edit existing screens. You can load or save screens any time.

The game !Laser is set to accommodate eight screens but you can have as many as the memory will allow. You will only have to alter *one* figure in *one* line in !RunImage in the !Laser directory. But first save a copy of !RunImage with a different name so if you make a mistake you've got a backup to use. Alter line 50:

```
50 all_screens% = 8
```

to the number of screens you have. Then save it as !RunImage in the !Laser directory.

Mike Goldberg

Controls

Z,X,",?	Movement keys – or use arrow keys
A,S	Rotate laser/mirror
0 to 7	Mirrors in their 8 orientations – although any number will do as you can rotate the mirrors later with the laser
8	Dangerzone
9	The reactor – you can only have one of these. If you press 9 once a reactor is drawn you will move to the new location. Background squares are drawn at the old location
Q	Wall – indestructible grey colour
W	Wall – destructible blue colour
Spacebar	Erase square
L	Load a saved screen – it has to be a number and nothing else
D	Save a screen

Public domain: Teri's choice

● ArchieMan	Classic arcade game in the desktop
● Backdrops	Customise your desktop
● Display	Shows your drawfiles
● Memorizer	Keeps a record of opened directories
● ModulInfo	Learn about modules without loading them
● Reflect	A thought for the day, hour, minute
● Sunny	Desktop silly – brings some sunshine to your iconbar
● TidyDisc	Uncompresses and standardises
● WinScreen	Emulates HP's VuSession
● ArmSi	Speed indexer for RISC machines

Discover more at lower prices . . .

Complete and return the coupon below and we will send you full details of our range of CD-ROM special offers PLUS over £300 worth of vouchers redeemable against purchases of Cumana CD-ROM drives, software and related products.

. . . with Cumana's world of cd-rom™

NAME _____ JOB TITLE (if applicable) _____

ADDRESS _____

_____

POSTCODE _____ DAYTIME PHONE NO. _____

HOME ☐ EDUCATION ☐ BUSINESS ☐

For official use: Reply No. _____ A/U

CUMANA LTD., Pines Trading Estate, Broad Street, Guildford, Surrey GU3 3BH. Telephone: 0483 503121 Facsimile: 0483 451371

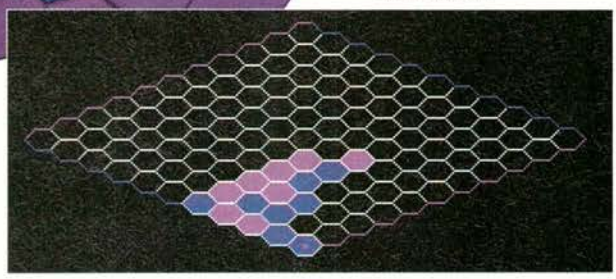
Prices from under £300 including VAT

BSI REGISTERED FIRM

Manufacturers of quality products since 1979

A Hex on it!

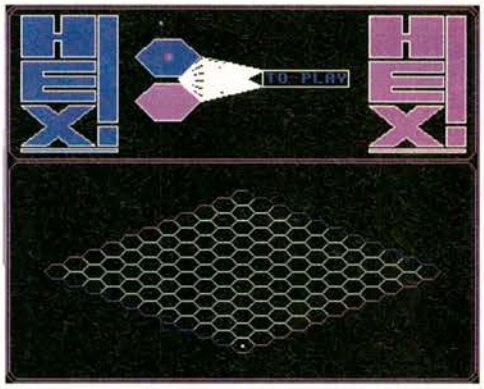
● *Join the opposite sides to win*



THIS is a fun and hexciting game of strategy for two players which requires skill, hexperience and some degree of hexpertise. Puns aside, HEX! is really great fun, and will probably have you tearing your hair out in frustration as you realise you've lost yet again.

The rules are simple enough – connect two opposite sides of an eleven by eleven grid of hexagons, by taking turns to fill them in. Player one must connect the blue edges, and player two the pink ones. Whoever is first to link their two sides is the winner

And that's all there is to it.



● *The playing area*

Controls

A	Up/left
*	Up/right
Z	Down/right
?	Down/left

Adrian Jackson

Sumvaders: Blast those aliens

THIS is a simple educational program based on space invaders. Get the sums right and the grinning tomato-like aliens will bite the dust, wrong and you lose one of your three lives. If you clear a wave you get more aliens and harder sums.

By holding down the keys ACEHT simultaneously you get the chance to change the difficulty level – the letters spell CHEAT or TEACH, depending on how you look at it. You get access to a screen that lets you set the largest numbers used and whether you want addition or subtraction sums.

Adrian Jackson

● *Oops, I got that one wrong*

● *Another alien bites the dust*

● *Get the question right to survive*

Acorn COMPUTING

Don't miss out on the great programs for the Acorn 8-bit machines that you can receive every month. From software written specially for *Acorn Computing* readers to an excellent selection of PD programs.

Subscribe now, turn to Page 31

Lots more music

COURTESY of James Coates of Different Ideas Music we have another selection of compositions which all run on the Hybrid Music 5000 system – we hope you enjoy them.

Match: Sun, sea and smiles

THERE she was, in the middle of the Sahara desert. The sun was at its highest. Kelly and her fellow travellers had to shelter until the evening before their journey could continue. To fill the time, games proved very popular, each member having their favourite.

Kelly's was Match, the game that involves laying out cards and trying to find pairs. A pack of cards would have been easy to transport, but as the rest of the team weren't sportsmen and thought it hilarious to completely bury the winner for half an hour after every game, an alternative was a necessity.

Carrying her BBC Master, double plinth disk drive, monitor and diesel generator, was preferable to being regularly immersed in sand, and besides, unlike any of the team, it was a decent opponent.

Computerised Match is a game for one to six players, each of which could be either human or the computer, playing one of ten levels, ranging from zero, which has no memory at all, to nine which would easily annihilate anyone that didn't possess a perfect memory.

The number of cards in a game could be varied. The sizes available were: Small – 16 cards, medium – 32, large – 48, and extra large – 64.

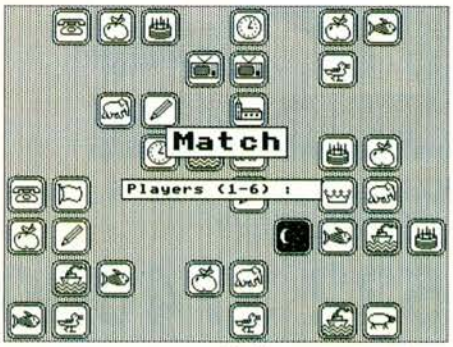
Each player took it in turn to pick two cards. The computer would do this in a flash, mere mortals had to use the cursor and return keys. If a pair was found, the player's score would be increased by one, and they got another go.

At any time, the keys N, R and Q, could be pressed. These started a new game with the same players, restarted from the title screen, and quit, respectively.

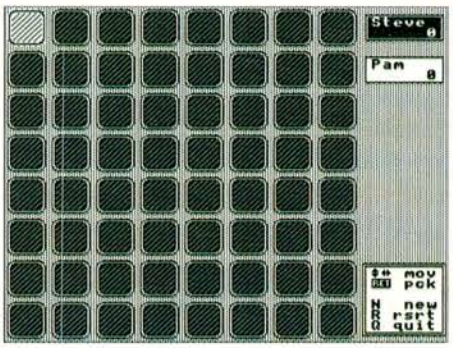
The winner was the player with the most pairs after all the cards had been matched.

It was so much fun, playing Match made the hours fly past, and when evening approached Kelly could go out with a contented smile on her face and dig up the computer.

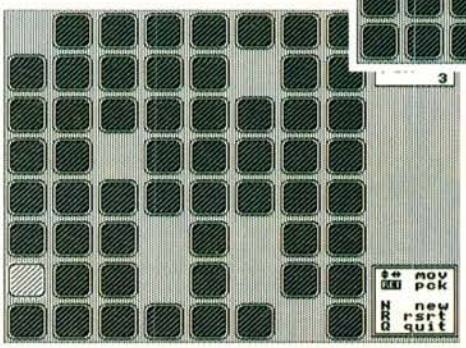
Andrew Bennett



● *Choose your partners*



● *Let's get started on this game*



● *Somebody's doing well and I know it isn't me*

FAULTY DISK?

If your subscription disk has a physical fault – doughnut won't rotate in the sleeve, disk errors and so on – please return it for replacement to:

Datapulse Disk
Unit 5
Station Road
Hungerford
Berkshire RG17 OL7

If there seems to be a fault with one of the programs please contact us at the magazine by post describing your machine set-up and exactly what happens when you run the problem program.

Dog Fight: The truth behind a myth

NUCLEAR fission has long been misunderstood. Despite all attempts by eminent scientists, the truth behind the phenomenon remained unresolved. Now, for the first time, I can reveal the intricate process that leads to an atom split.

Atoms are intelligent lifeforms, have evolved a complex communication system, developed a sophisticated public transport network and have game shows.

Fission occurs during the deciding game of ABC's (Atomic Broadcasting Corporation) rave success game show, *Atomic Antics*. Called *Dog Fight*, it involves two contestant atoms that battle in a long cuboid arena. Each can fire sub-atomic particles which will damage a shield on contact. Without a shield an atom cannot contain itself and explodes, releasing energy and lots of bits.

To make the procedure easily understandable, I have constructed a simulation.

Dog Fight is a game for two players and the aim is to destroy your opponent. The screen consists of two 3D views, the left is player one, on the right, player two. Below each view is a shield indicator, and when this becomes empty the atom is destroyed.

Each atom is controlled by moving in one of six directions, firing or performing an instantaneous 180 degree spin. The control keys default to those shown here but can be changed from the title screen.

Good luck, and may the truth always be with you.

Action	Player one	Player two
Left	Z	<
Right	X	>
Up	F	*
Down	C	?
Forward	G	}
Backward	V	Shift
Fire	H	Return
180 Spin	B	Delete

Andrew Bennett

Wanna sell some software?

Acorn Computing – the only newsstand magazine continuing to support your BBC Micro/Electron – is always on the lookout for good quality software to feature on the 8-bit subscription disk.

If you think your program has got what it takes just send it on disk to:

BBC Disk Submissions, Acorn Computing, Europa House, Adlington Park, Macclesfield SK10 4NP.

Don't forget to include a declaration stating the material is:

- All your own work
- Has not been submitted elsewhere
- We have your permission to use it

Vantage One DIRECT

FREEPOST LS5106, Dept AC24, LEEDS LS7 3YY

0532 374000

- **Prices all include VAT!**
- **Delivery is FAST and FREE!** (UK mainland)
- **Send us your order FREEPOST!** Don't pay to place an order!
- **FREE quarterly news brochure** - just send us the coupon opposite (FREEPOST!) to reserve your copy. Details of all the latest releases, product descriptions, and exclusive special offers to you, **DIRECT**.
- **No minimum order level**
- **Discreet packaging for surprises!**

Fast, friendly improved Mail Order service for YOUR Archimedes series computer!

JOYSTICK PACKS!

Pack One Joystick Interface V2.4 and 1 X Python 1 **£49.95**

Pack Two Joystick Interface V2.4 and 2 X Python 1 **£59.95**

Pack Three Joystick Interface V2.4 and 1 X Superpro Auto joystick **£51.95**

Pack Four Joystick Interface V2.4 and 2 X Superpro Auto **£61.95**

Only £4.95!

Splat!

Or spend over £50 on software and get a fun Splat!mat **FREE!**

A pleasant change from the run of the mill mouse pad tradition! It's revolutionary properties give excellent traction for the mouse ball. Every Splat!Mat has a microscopic carpet-like pile making the mat warm to the touch!

No two Splat!Mats are the same!

Hewlett Packard Deskjet Printers

HP Deskjet 310 — £221.95
- 300 dpi mono
- 300 dpi colour (with optional colour kit)
- 6 built-in typefaces
- Support for transparencies
- Optional cut-sheet feeder
- Mains or battery power

HP Deskjet 510 — £239.95
- Professional 300 dpi mono
- Greyscale printing for dramatic black graphics and images
- 3 pages/min – faster than most dot-matrix printers
- Takes A4 paper, plain or glossy, transparencies & up to 20 envelopes

HP Deskjet 550C — £469.95
- 300 dpi black & convenient colour plain paper printing
- Integrated black and colour printing
- 6 built-in typefaces
- Paper sizes include A4, letter, legal & executive. Prints on glossy paper, transparencies and stacks of up to 20 envelopes.

HP Deskjet 1200C — £1579
- Memory 2MB, expandable to 26MB
- Full colour graphics at 1-2 minutes per page
- 6 page/min in black text
- 45 resident scaleable fonts

All prices **INCLUDE** VAT, cable & carriage*

Dazzling Selectio

GAMES

	SRP	Our Price
2067 BC	19.99	16.95
Air Supremacy	24.95	21.95
Aggressor (new version)	14.99	12.95
Battle Chess	29.95	24.75
Birds of War (2MB Req)	34.95	32.50
Break 147/Superpool	34.95	29.50
Carnage Inc (2MB Req)	25.99	22.35
Champions	29.95	24.75
Manchester Utd, Jahangir Khan Squash, Boxing Manager and World Class Leaderboard		
Cycloids	19.99	17.95
Cygnus Triple Pack	-	19.95
Tower of Babel, IronLord and Twinworld		
Chess 3D	24.95	22.85
Chocks Away Compendium	34.95	31.75
Chopper Force	29.95	24.75
Chuck Rock	25.99	21.50
Cyber Chess	34.95	30.55
Cyberzone	25.95	23.95
Cyborg (2Mb min)	25.95	22.35
Demon's Lair (2Mb min)	25.95	23.50
Dreadnoughts	34.95	31.95
Dreadnoughts - Bismarck	16.95	14.50
Dreadnoughts - Ironclads	16.95	14.50
Dungeon	34.95	30.55
EGO: Repton 4	24.99	21.95
Elite	39.95	37.65
Enter the Realm	25.95	21.15
E-Type Compendium	25.95	21.25
Exotic Adv. Sylvia Layne	25.95	22.35
Fervour	24.99	22.35
FRED	19.99	17.95
G O D S	25.99	22.35
Haunted House (2MB Req)	25.99	22.35
Heimdall (OUT NOW!) (2MB Req)	29.99	26.95
Holed Out Compendium	25.95	21.15
Ixion	19.99	17.95
J.Khan Squash	-	9.95
James Pond	25.99	22.35
James Pond 2 ROBOCOD	25.99	22.35
Lemmings	25.99	22.35
Lemmings 2 - Tribes (2MB Req)	29.99	27.95
Lotus Turbo II	25.99	22.35
Mad Professor Mariarti	-	9.95
Manchester Utd	-	9.95
Manchester Utd Europe	25.99	22.35
Magic Pockets	25.99	22.95
Mayhem	-	9.95
MicroDrive 2	19.95	16.95
MicroDrive Designer	19.95	16.95
Oh No! More Lemmings	19.99	17.65
Omar Sharif's Bridge	29.99	25.85
Pandora's Box	25.95	22.35
Phaethon	25.95	23.50
Play It Again Sam	24.95	21.95
Conqueror, Rotor, No Excuses and Hostages		
Play It Again Sam 2	24.95	21.95
ArcPinball, Repton 2, Masterbreak and ZARCH		
Play It Again Sam 3	24.95	21.95
Top Banana, Zelanites, Letrouve and Superior Golf		
Populous	29.99	25.85
Premier Manager (Soon)	25.99	22.35
Putlt	21.95	19.95
Powermonger (Soon) (2MB Req)	29.95	27.50
Quark	24.95	21.95
Real McCoy 2	34.95	26.95
Apocalypse, Holed Out, The Olympics, Inertia		
Real McCoy 3	34.95	26.95
Nevyron, Powerband, Dropship, The Wimp Game		
Real McCoy 4	34.95	31.75
Galactic Dan, Grevious Bodily'ARM, Cataclysm, and X-Fire		
Repton 3	24.95	21.95
Revelation (Krisalis)	-	9.95
Saloon Cars Deluxe	34.95	29.50
Saloon Cars Extra Crses	19.95	16.50
Sensible Soccer (Soon)	25.99	22.95
Striker (Soon - price TBC)		
Sim City	34.99	25.85
Simon the Sorcerer (soon)	39.99	36.95
SMALL	24.95	22.95
Spheres of Chaos	24.99	21.95
Stunt Racer 2000	34.95	29.45
S.W.I.V.		9.95
Technodream	24.95	21.95
The Crystal Maze	-	39.95
The Krisalis Colln	29.99	24.75
Mad Professor Mariarti, Terramex, Pipemania, and Revelation		
The Last Ninja	24.95	21.95
Triumvirate 1	12.95	11.95
Board, Race and Solitaire		
Triumvirate 2	12.95	11.95
Clix, Trix and Nautilus		
Virtual Golf (2Mb min)	34.95	29.45
Warlocks	29.99	26.95
Waterloo	25.95	21.95
Xenon 2	25.99	23.95
Zool	25.99	22.35

Joysticks & Interfaces

	SRP	Our Price
Joymaster (Utility for A3010)	-	19.95
Joystick Interface V2.4	-	39.95
Joystick Extension Cable	-	11.95
Delta Cat	34.95	31.95
Mouse/Joystick Splitter	20.39	17.95
Power Pad Joystick (Single)	29.99	27.95
Power Pad Joystick (Double)	39.99	37.95
Superpro Auto	15.27	-
Quickshot III Turbo	14.25	-

Music & Sound Applications

Armadeus	82.00	69.35
Desktop Tracker	58.69	56.95
Digital Symphony	50.00	47.95
Notate	69.33	49.35
Playback	22.33	20.95
Printer Port Sampler	49.95	45.85
Rhapsody 2 (1mb min)	61.95	51.75
Rhapsody 3 (2mb min)	99.95	92.85
Rhythm-Bed	49.95	44.65
Score Draw	61.95	51.75
Serenade	135.00	124.55
Sound FX Maker (intro prog)	39.95	36.95
Sound Sampler & Midi Card	93.99	89.95
SoundTrack K/bd Trainer	93.94	84.50
Speech	24.95	21.95
Supersound Creations 1 & 2	18.34	13.95
Vox Box	61.95	51.75

LEISURE/VARIOUS

Ancestry	82.19	69.35
ARCticulate	25.95	22.35
Games Wizard 2	-	19.99
Photopia	24.95	21.95
Titler	149.95	134.45

UTILITIES

ABC Compiler Release 3	117.44	92.85
ArcDFS	29.95	25.95
ARCFS 2.2	29.32	27.95
Arch. Operating system	22.08	18.75
Archimedes Visual Backup	49.95	42.50
Arclight	70.44	59.95
ArcMonitor	25.50	11.95
Datastore Utility Disc 2	16.45	13.95
Desktop Assembler	175.08	139.95
Euclid	117.44	99.95
Font FX	-	11.75
Gerber Plot	75.00	63.45
GraphBox Professional	152.69	122.25
GraphBox V2	82.19	66.95
Hard Disc Companion II	52.88	44.65
Image Animator	81.08	69.35
Illusionist	99.95	80.95
Instigator	49.95	42.35
Investigator 3	58.69	56.95
Knowledge Organiser 2	99.95	92.85
Mogul	35.19	29.45
Morpheus	34.95	31.50
MultiFS V1.45	36.00	31.75
PC Emulator V1.8	116.33	109.95
Printshop	25.95	21.95
Rephorm	58.69	54.95
Render Bender 2	99.95	90.50
RISC Basic Compiler V3.07	99.95	90.50
Shape FX	-	11.75
Sleuth	57.58	49.35
SolidsRENDER	99.95	90.50
Splice	46.94	39.95
Tween	46.94	40.95
Type Studio	52.88	44.75
Wimp Prog Toolkit	19.95	17.95

WORD PROCESSORS

Desktop Thesaurus	22.33	19.95
Easiword V2	58.69	50.55
EasiWriter	176.25	134.95
Impression Style	116.32	112.95
Pendown 2	63.45	54.10
Pendown Etoiles	63.45	54.10
Pendown Ext. Outline Fonts	22.33	19.95
Pendown Plus	92.83	79.95
Primeword	70.44	59.95
Start-Write	81.08	64.65
Talking Pendown	75.20	63.45
Techwriter	233.83	186.83
Wordz	116.33	99.95

Educational Discount available
Official school orders welcome; 'phone for info leaflet

WHAT YOU SEE IS WHAT YOU PAY! Everyth

n! Brilliant prices! Amazing speed!

	SRP	Our Price
WordWorks	45.93	42.95
FIREWORKZ	175.08	173.95
(Resultz & Wordz together!)		

SPREADSHEETS

Eureka 2	139.83	116.35
ProSHEET	49.95	42.35
Resultz	139.83	129.95
FIREWORKZ	175.08	173.95
(Resultz & Wordz together!)		
Schema	135.00	111.65

DATABASES

Archivist Pro	45.00	42.95
Datapower	175.08	146.95
DataVision	99.95	84.65
Desktop Database	62.28	52.95
Flexifile	116.33	80.95
Junior Pinpoint	34.08	29.95
Masterfile 3	57.58	50.55
Multistore II	152.69	123.35
Pinpoint	116.33	76.35
S-Base 2 Developer	292.58	263.35
S-Base 2 Developer Plus	445.33	399.95
S-Base 2 Personal	151.58	134.95
The Junior Database	62.28	52.85

Integrated Office Suite

Office Tools	375.00	339.95
Pipedream 3	92.83	84.65
Pipedream 4	151.58	139.85

ACCOUNTS

Arcounts Manager	351.33	299.95
Home/Club Accounts	46.94	39.95
Personal Accounts v2	34.95	33.95
Prophet	199.75	170.45

Business/Drivers/Various

A1 PROdriver (Add-on)	35.19	31.50
Almanac v3	85.00	78.75
BJ10EX Turbo Driver	57.58	55.95
BJC800 Turbo Driver	116.33	111.95
BJC 600 turbo Driver	57.58	53.95
Bubble Jet Printer Driver	23.44	19.95
Cable News	175.08	150.45
Canon PROdriver	52.82	44.95
Chartwell	29.95	26.95
DeskEdit V2	31.95	29.45
Desktop Office V2	116.33	84.65
Equazor	57.57	43.50
Film Maker	79.95	70.50
H.P. Deskjet Colour Driver	17.63	15.95
H.P. Printer Driver (All)	23.44	21.95
H.P. PROdriver (Not Os 2)	52.82	47.50
Image Outliner	92.83	84.65
Impression Business Suppl.	57.58	45.85
Integrex 132 Printer Driver	23.44	21.95
LC200 Colour Sprite Dump	30.60	16.95
Mastering 1st Word Plus	21.90	19.95
Nightsky	79.95	78.75
Oak PCB	117.44	92.95
Presenter GTi	82.19	77.55
Print Shop	25.95	23.50
Shareholder V2	125.00	112.85
Shareholder Professional	195.00	192.75
Showpage	175.07	167.95
Spooler (for Clare's products)	15.00	13.95
Star LC 10 Printer Driver	23.44	19.95
Star/Epson Colour Driver	17.63	14.95

Computer Aided Design

ARC-PCB	125.00	112.85
ARC-PCB Professional	275.00	249.95
ARC-PCB Schematics	375.00	339.65
CADet	175.08	150.45
Excellon DRILL	75.00	64.65
Kiddicad	82.19	69.35
PowerROUTER for ARC-PCB	195.00	186.85
ProCAD	581.63	462.95
Realtime Solids Modeller	195.00	179.95
SolidCAD	99.95	90.50
SolidTOOLS	275.00	239.75
Worracad	117.44	92.85

LANGUAGES

Arch. Assembly Language	22.11	19.95
Cambridge Pascal	117.44	92.85
Desktop C (2Mb min)	269.08	211.50
Easy C	57.58	51.95

COMMUNICATIONS

	SRP	Our Price
ArcComm V2	69.33	55.25
Arcterm 7	79.95	69.35
Hearsay 2	88.13	79.95

DTP & ART PACKAGES

ARCtist	25.95	22.35
Art School	29.95	29.45
Artisan 2	61.95	50.55
Artworks	198.57	145.75
Atelier	99.88	70.50
Desktop Folio	75.20	63.45
Folio for the Archimedes	44.06	37.45
Imagery 2	89.95	76.35
Impression Style	116.32	112.95
Impression Publisher	198.57	159.95
Ovation	116.33	98.75
Poster	-	99.95
PrimeArt	93.94	79.95
Pro Artisan 2	135.00	127.95
QPaint	49.95	44.95
Revelation 2	89.30	87.95
Revelation 2 CD ROM	116.33	115.25
Revelation ImagePro	163.33	149.25

HARDWARE

A3010 from 1MB to 2MB Memory upgrade	-	39.95
A3000 from 1MB to 2MB Memory upgrade	-	59.95
A3010 from 1MB to 4MB Memory upgrade	-	149.00
A3000 from 1MB to 4MB Memory upgrade	-	151.50
Scanlight Junior 256	233.83	209.95
Scanlight Senior	351.33	315.95
Scanlight Video 256	258.50	234.95

EDUCATIONAL

10 out of 10 Dinosaurs	25.95	23.50
10 out of 10 Driving Test	25.95	23.50
10 out of 10 Maths-Number	25.95	23.50
10 out of 10 Maths-Algebra	25.95	23.50
10 out of 10 English	25.95	23.50
10 out of 10 Early Essentials	25.95	23.50
10 out of 10 French	25.95	23.50
10 out of 10 Junior Essentials	25.95	23.50
10 out of 10 Maths Statistics	25.95	23.50
Adventure Playground	25.99	23.50
An eye for Spelling	41.13	36.95
Ancient Greece	29.38	25.95
Animated Alphabet	-	26.97
Animated Numbers	-	26.97
Arcventure 1 - The Romans	-	37.54
Arcventure 2 - The Egyptians	-	37.54
Arcventure 3 - The Vikings	-	37.54
Astro	35.25	31.95
Aztecs	-	46.94
Badger Trails	-	46.94
Balloons/Zoo	-	35.25
Best Four Adventure	44.06	39.95
Best Four Language	44.06	39.95
Best Four Maths	44.06	39.95
Billy - Bothersome Bully	-	11.69
Bobby the Boastful Bird	-	11.69
Bookstore (Primary)	46.41	41.95
Boys and Girls	-	19.95
Bumper Disc 1	23.95	19.95
Bumper Disc 2	23.95	19.95
Castle Life	70.50	63.50
Castle of Dreams	25.99	23.50
Chameleon	-	44.06
Chatter	-	44.06
Chemistry Superstar	27.03	24.50
Christmas Adventure	25.99	23.50
Christmas Allsorts	-	19.92
Clarence the Clumsy Cat	-	11.69
Coffee (9-15yrs)	34.99	31.50
Concept Designer Pack	28.20	25.50
Connections	-	34.02
Control Logo	29.38	26.50
Craftshop 1	-	23.44
Craftshop 2	-	23.44
Crossword + (8-Adult)	19.95	16.95
Derek's Dopey Dinosaur	-	11.69
Desktop Folio	75.20	67.95
Dktp Folio W. War 2 Pk	26.43	23.95
Dktp Folio Christmas Pk	26.43	23.95
Dktp Folio Editors Pk	26.43	23.95
Dktp Folio Space Pk	26.43	23.95
Dktp Folio Maths Pk	26.43	23.95
Doris the Dotty Dog	-	11.69
Educational 1	-	19.95
Edwina's Energetic Elephant	-	11.69
Egypt Extras - Genesis	11.68	10.50
Farmer Giles 2	20.39	14.95
First Logo	28.20	24.95
First Numbers	-	19.95
First Steps Collection	-	44.00
First Words	-	19.95
First Words & Pictures	27.03	22.95
Folio for Archimedes	44.06	41.95
Frontier 2000	93.94	89.95
Fun & Games (5-7yrs)	19.95	16.95
Fun School 3 Series (Each)	24.99	21.95

Fun School 4 Series (Each)	24.99	21.95
Fun With Numbers	-	19.95
Gemini	23.44	19.95
Geordie Racer	28.20	25.50
Giant Killer	35.19	29.95
Giant Killer Support Disc	29.38	24.95
Gordon's Groovy Granny	-	11.69
Granny's Garden	-	28.79
Graph-It	-	23.44
Hilighter	-	41.07
House of Numbers (6-13yrs)	27.03	22.95
Imagine V2 (needs 2Mb)	52.88	47.50
Insight	81.08	71.95
Investigating Maths (9-13yrs)	44.06	39.95
Jiglet	-	23.44
Jigsaw	-	23.44
Keyboard Player	23.50	21.15
Kid Pix	44.06	39.95
Landmarks - Each1	28.20	24.95
Let's Spell 4 Pack	-	24.95
Let's Play Series (Each)	-	19.95
Letters & Pictures (6-8yrs)	23.50	19.95
Lexicon French	39.00	36.95
Lexicon German	39.00	36.95
Lexicon Russian	50.00	45.95
Linkword French	46.95	39.95
Linkword German	46.95	39.95
Linkword Spanish	46.95	39.95
Little Red Riding Hood	17.63	14.95
Logotron Logo	81.08	71.95
Lots More Fun & Games	22.95	19.50
Lucy the little Liar	-	11.69
Make 'n' Match	-	9.95
Magpie	69.33	59.95
Mapping Skills	34.66	31.95
Maps & Landscapes (9-14yrs)	27.03	22.95
Maths Pack 1 (5-7yrs)	12.95	10.95
Mega Maths (A-Level)	25.22	21.95
Mental Maths (5-16yrs)	20.39	17.35
Micro English (8yrs - GCSE)	25.22	21.95
Micro French (8yrs - GCSE)	25.22	21.95
Micro German (8yrs - GCSE)	25.22	21.95
Micro Maths (11yrs - GCSE)	25.22	21.95
Micro Science (8yrs - GCSE)	25.22	21.95
Movaword	23.50	19.95
My First Words	23.44	19.95
Navigator	52.88	47.50
Newton	22.33	19.95
Nightsky	79.95	74.95
Noddy's Big Adventure (Soon)	25.99	23.99
Noddy's Playtime Requires OS 3.1 & 2MB	25.99	23.99
Noot	-	52.88
Numbers in the Nat. Cur.	44.06	39.95
Numbers/Pictures (4-6+yrs)	23.50	19.95
Number Zoo	16.45	14.85
Numerator	45.83	39.95
Ollie Octopus Sketchpad	17.99	15.50
Pendown 2	63.45	57.95
Pendown Etoiles	63.45	57.95
Pinpoint	116.33	99.95
Pirate	27.03	22.95
Podd	32.31	29.95
Polyominoes	35.25	29.95
Poster	-	104.58
Primary Maths Course (3-12yrs)	25.22	21.95
Primary Nature	70.50	63.50
PrimeArt	93.94	79.95
Puncman 1&2 (7-13+)	23.50	19.95
Puncman 3&4 (8-14+)	23.50	19.95
Puncman 5, 6, & 7 (8-15+)	23.50	19.95
Punctuate	17.88	17.50
Reading Writing Course	25.22	21.95
Recall	-	46.94
Reversals	23.50	19.95
RoboLogo	49.95	44.95
Round World Yacht Race	34.99	29.95
Screen Turtle	52.88	47.50
Search & Rescue (9-15yrs)	34.95	29.95
Seelinks - Ourselves	34.66	31.95
Seelinks - Pondwatch	44.06	41.95
Seelinks - Tourism	67.56	64.95
Seelinks - Transport	44.06	41.95
Selladore Tales	-	29.32
Sherston Naughty Stories Pk 1	-	58.46
Sherston Naughty Stories Pk 2	-	58.46
Shylock Gnomes	22.33	19.95
Skyhunter	28.20	25.50
Smudge the Spaniel	25.99	21.95
Snippet	-	44.06
Spelling Week By Wk (6-14)	27.03	22.95
Splash	-	23.44
Sports Day	26.44	23.75
Sports People	26.44	23.75
Stig of the Dump	-	28.14
The Farm	-	23.47
Time Traveller - Britain 1930's	38.19	34.95
.. And Resource Pack	67.50	59.95
T. Trav. Exp. Trade & Ind.	46.41	41.75
.. And Resource Pack	69.85	62.95
T. Trav. Make your Own	44.06	39.95
T. Trav. Making of the UK	46.41	41.95
.. And Resource Pack	69.85	62.95
T. Trav. Medieval Realms	46.41	41.75
.. And Resource Pack	69.85	62.95
Time Traveller - Victorians	38.19	34.95
.. And Resource Pack	67.50	59.95
Talking Pendown	76.95	69.95
Tasmin's Terrible Tantrum	-	11.69
Terry's Tricky Trainers	-	11.69
The Art Machine Pack 1 (9+)	46.94	39.95
The Art Machine Pack 2 (9+)	35.19	29.95
The Crystal Rain Forest	-	46.94
The Puddle & The Wardrobe	35.19	29.95
The Worst Witch	-	31.67
Through the Dragon's Eye	28.20	24.95
Tina's Terrible Trumpet	-	11.69
TinyLogo/Tiny Draw (4-9yrs)	35.19	29.95
Tiny Puzzle	29.38	26.50
Toby - Troublesome Tractor	-	11.69
Topographer	79.95	71.95
Touch Type	51.04	45.95
Turbo Type	24.95	21.95
TV Fun & Games	22.95	18.95
Viewpoints	-	46.94
Weatherman	9.95	8.50
Welsh Podd	46.41	41.95
Whale Adventure	35.19	32.95
Whale Facts	41.13	36.95
Whale Games	23.44	21.95
Word Bank	29.38	26.50
World Map Study	79.31	71.50
Worldmaker	67.56	59.95
Words & Pictures	27.03	22.95
Yes Chancellor 2	27.03	22.95

Books/Videos/Tutorials

Artworks Made Easy	14.95	13.95

Don't know which to choose? Ask for our Educational catalogue for descriptions

Send for your FREE catalogue NOW!

Vantage One Direct specializes in mail order for Acorn Computer users. Put yourself on THE mailing list for
* Free quarterly catalogue. Includes details of new releases, product descriptions and review comments helping you to achieve the best buys around.
* Exclusive special offers, often including extra discounts!
* Remember, what you see is what you pay – VAT and carriage are both included! You don't even pay to send us your order!

(AC24)

Items	Qty	Price
	TOTAL	

Name
Address

Postcode

I enclose a cheque/Postal Order payable to Vantage One Direct
Please debit my Access/Visa card

Expiry Date /9

I do not wish to place an order at this time, but please send me your FREE catalogue. (Don't forget to fill in your name and address above!)

Archimedes Series ☐
BBC B/B+/Master 128/ Master Cpct or Electron ☐

If you don't want to cut the magazine just take a photocopy or write on a plain piece of paper the items you would like quoting your name, address and payment details

Prices are correct at the time of going to press, but are subject to change without notice; E&OE. Free or inclusive carriage is applicable to the UK only but excludes packages over 2KG in weight to Scottish Highlands and Ireland

ng Inc VAT & carriage!

ICS

051-625 1006

SOFTWARE

FEBRUARY 1994

1		
10 out of 10	*10 out of 10*	
– Dinosaurs, Driving Test, Early Essentials (-6), English (6-16), French (6-16), Junior Essentials (5-11), Maths Algebra (6-16), Maths Number (6-16), Maths Statistics (6-16)	each	£19
– German, Italian, Science, Spanish	each	£POA
1st Paint	*Resource*	£34
1st Word Plus Manual	*Acorn*	V0 £10
2		
2067 BC	*Oregan*	£18
2067 BC + Entropy	*Oregan*	£26
3		
3D Construction Kit	*Krisalis*	£9
A		
A3000 Technical Reference Manual	*Acorn*	V0 £33
A4 Technical Reference Manual	*Acorn*	V0 £67
A5000 Technical Reference Manual	*Acorn*	V0 £67
ABC Version 3	*Oak*	£79
Acheton / Kingdom of Hamil	*Topologika*	£17
Accounts	*ACS*	£245
Acorn Advance	*Acorn*	£88
– Primary Licence		£183
– Secondary Licence		£442
– User Guide		V0 £11
Advantage	*Longman*	£33
Adventure Playground, age 5-8	*Storm*	£19
Air Supremacy	*Superior*	£18
Aldebaran	*ArcAngels*	£26
Alerion	*Dabs*	£12
Alien Invasion	*Dabs*	£12
All-In Boxing	*Dabs*	£12
Almanac 3	*Stallion*	£69
AlphaBase	*Clares*	£37
Alpha-Sound	*Xavier*	£29
Alpha-Tracks	*Silicon*	£74
Amazing Maths	*Cambridgeshire*	£19
Amazing Ollie, age 4+	*Storm*	£14
Ancestry, KS3,4	*Minerva*	£59
Ancient Egyptians, age 7-11	*Storm*	£POA
ANSI C Release 4 User Guide	*Acorn*	V0 £25
Arcade 3	*Clares*	£12
ArcComm 2	*Longman*	£47
ArcDFS	*Dabs*	£22
Arc Embroidery	*TechSoft*	£148
Arcendium	*Dabs*	£12
ArcFAX	*David Pilling*	£19
ArcFS 2	*Vertical Twist*	£24
Archimedes Assembly Language	*Dabs*	V0£15
– with disc		£22
Archimedes Game Maker's Manual	*Sigma*	V0 £15
Archimedes Operating System (not OS3)	*Dabs*	V0 £15
– with disc		£22
Architech	*ExpLAN*	£165
Archivist Pro	*Oregan*	£38
Archway 2	*Simtron*	£78
ArcLight	*Ace*	£51
Arcol Desktop	*ExpLAN*	£49
Arcounts Manager	*Visionscan*	£269
ARC-PCB	*Silicon*	£96
– Professional	*Silicon*	£213
– Schematics	*Silicon*	£289
ArcSpell 1	*Xavier*	£29
ArcSpell 2	*Xavier*	£29
Arcterm 7	*Serial Port*	£59
ARCticulate	*Fourth Dim*	£19
ARCtist	*Fourth Dim*	£19
ArcTrivia	*Moray*	£21
Arcventure – I ... The Romans, age 10-12; II ... The Egyptians, age 8-9; III ... The Vikings, age 7-11 – each	*Sherston*	£30
Armadeus	*Clares*	£59
Around the World in 80 Days, age 9-14	*Sherston*	£POA
Artisan 2	*Clares*	£43
Art Machine Pack 1	*Topologika*	£29
ArtSchool	*Micro Studio*	£25
ArtWorks	*CC*	**£118**
– network licence		£650
– site licence		£545
ArtWorks CD	*CC*	£165
ArtWorks Made Easy	*Dabs*	V0 £15
Astro	*Topologika*	£30
Atelier, KS2-4	*Minerva*	£60
AudioWorks	*CC*	£45
AUN/Level 4 Fileserver	*Acorn*	£395
Avon & Murdac	*Topologika*	£16
Axis	*TBA*	£19
Aztecs, age 7-11	*Sherston*	£37
B		
Badger Trails, age 9-11	*Sherston*	£37
Bambuzle + Blitz	*Arxe*	£20
Basic Wimp Programming	*Dabs*	V0 £15
Battlechess	*Krisalis*	£21
Battletank	*Minerva*	£9
BBC Basic Reference Manual	*Acorn*	V0 £22
Beginner's Guide to Wimp Programming on the Archimedes	*Sigma*	V0 £13
Birds of War	*Fourth Dim*	£25
Birthday Present	*Topologika*	£POA
Bitfolio Cartoon Graphics	*Look*	£24
Black Angel	*Fourth Dim*	£26
BlowPipe	*Leading Edge*	£14
Bodywise, age 9-14	*Sherston*	£POA
Bookstore	*ESM*	
– Primary, KS1,2	*ESM*	£40
– Secondary, KS3,4	*ESM*	£59
– Welsh Primary, KS1,2	*ESM*	£61
– Welsh Secondary, KS3,4	*ESM*	£81
Break 147 & Superpool	*Fourth Dim*	£25
Britain by Rail	*Fisher-Marriott*	£19
Budget DTP	*Dabs*	V0 £13
Bug Hunter / MoonDash	*Minerva*	£10
Bug Hunter in Space	*Minerva*	£10
Business Accounts	*Minerva*	£275
C		
C (new edition)	*Dabs*	V0 £16
– with disc		£24
CableNews	*Lingenuity*	£128
CADet, KS3,4	*Minerva*	£128
Cambridge Pascal	*Oak*	£79
Cardmania	*CIS*	£POA
Carnage Inc.	*Fourth Dim*	£20
Cartoon Collection	*Micro Studio*	£16
Casino	*Minerva*	£11
Castle of Dreams, age 7-11	*Storm*	£20
Cataclysm	*Fourth Dim*	£16
Caverns	*Minerva*	£10
Chameleon (new version)	*4mation*	£33
Champions Compilation	*Krisalis*	£21
Charts & Graphs	*Computer Tutorial*	£17
ChartWell	*RISC*	£23
Chatter	*4mation*	£35
Chequered Flag	*CIS*	£POA
Chess 3D	*Micro Power*	£19
Children's Graphics	*Micro Studio*	£16
Chocks Away Compendium	*Fourth Dim*	£27
Chopper Force	*Fourth Dim*	£21
Christmas Adventure, age 5-8	*Storm*	£20
Christmas Allsorts, age 7-16	*Sherston*	£16
Chuck Rock	*Krisalis*	£19
Clip Art CD	*CC*	£20
Clip Art Collection	*Vertical Twist*	£22
Clip Art Set 1, drawfiles	*Midnight*	£26
Clip Art Set 2, drawfiles	*Midnight*	£26
Clip Art Vol 3 (Animals)	*Graphics Factory*	£12
CNC Designer V3 for Lathe	*TechSoft*	£343
CNC Designer V3 for Lathe and Miller	*TechSoft*	£493
CNC Designer V3 for Miller	*TechSoft*	£343
Coffee, age 9+	*Storm*	£28
Colour Screen»Mac	*Human*	£90
– Arc/Mac Cable	*Human*	£24
ColourSep	*ICS*	£15
– site licence		£45
ColourSep Starter Packs	*ICS*	
– DeskJet 500 (Mono)		£55
– site licence		£85
– BJ-10 with Cartridges		£85
– site licence		£115
– BJ without Cartridges		£40
– site licence		£70
Compression	*CC*	£34
Computer Basics	*Computer Tutorial*	£17
Concept Designer	*Longman*	£21
Connections, age 5-8	*Sherston*	£27
Control Logo	*Longman*	£21
Converta-Key	*Triple R*	£9
Countdown to Doom / Return to Doom / Philosopher's Quest	*Topologika*	£25
Craftshop 1	*4mation*	£19
Craftshop 2	*4mation*	£19
Creator II	*Alpine*	£46
Cross-32 Meta-Assembler	*Baildon*	£125
– manual for evaluation	*Baildon*	V0 £15
Crystal Maze, age 7-70	*Sherston*	£30
Crystal Rain Forest, age 8-11	*Sherston*	£35
Cyber Chess	*Fourth Dim*	£26
Cyborg	*Alpine*	£19
Cycloids	*GamesWare*	£17
D		
Darryl the Dragon, KS1,2	*4mation*	£18
– Activity Sheets		£10
DataGraph	*Topologika*	£29
Datapower	*Iota*	**£125**
DataVision	*Silicon*	£72
DataVision Lite	*Silicon*	£42
DataWord	*Triple R*	£15
DBEdit	*4mation*	£28
Decorated Alphabet, sprites	*Micro Studio*	£17
Demon's Lair	*Fourth Dim*	£20
Designer V3	*TechSoft*	£193
Designer Intro (not OS 3)	*TechSoft*	£75
Designer's Graphics, draw/sprites	*Micro Studio*	£16
DeskEdit2	*RISC*	£25
Desktop Assembler	*Acorn*	£119
Desktop C	*Acorn*	£180
Desktop Database	*Iota*	£45
Desktop Folio, KS1-4	*ESM*	£65
Desktop Folio Curriculum Packs, KS2+: Christmas, Editors, Maths, Space, World War II	each	£24
Desktop Folio – Welsh, KS1-4	*ESM*	£87
Desktop Office v2, KS2-4	*Minerva*	£49
Desktop Publishing on the Archimedes	*Sigma*	V0 £14
Desktop Thesaurus	*RISC*	£17
Desktop Tracker	*Vertical Twist*	£50
DFS Reader	*RISC*	£9
Digital Symphony	*Oregan*	£41
Dinosaur Discovery, KS2	*4mation*	£25
– site licence		£54
Disc Rescue	*Look*	£28
Dragonball	*TBA*	£13
DrawBender	*ICS*	£10
– site licence		£30
!Draw_Help, age 13+	*Sherston*	V0 £16
Draw Print & Plot	*Oak*	£35
Dreamwave, age 14+	*EMR*	£34
Droom	*Resource*	£24
Dust	*Resource*	£29
DTP Graphics 2 Colour	*Micro Studio*	£8
DTP Seeds	*4mation*	V0 £8
Dungeon	*Fourth Dim*	£26
E		
Easiword v2, KS2-4	*Minerva*	£43
EasiWriter 2	*Icon*	£115
– Dictionaries: Danish / Dutch / French / German / Italian / Norwegian / Spanish / Swedish / Swiss German	each	£30
Easy C	*RISC*	£43
Ego: Repton 4	*Superior*	£18
Elite	*Hybrid*	£32
EluciData (OCR)	*Irlam*	£155
– bought with Irlam Scanner		£79
Enter the Realm	*Fourth Dim*	£18
E-numix	*CIS*	£POA
Equasor	*CC*	£37
Ethnic Borders	*4mation*	£10
E-Type Compendium	*Fourth Dim*	£18
Euclid	*Ace*	£89
Eureka version 2	*Longman*	£99
Event	*ExpLAN*	£21
ExcellonDrill	*Silicon*	£55
Exotic Adventures of Sylvia Layne	*Fourth Dim*	£20
Express	*Midnight*	**£35**
Eye for Spelling, KS1,2	*ESM*	£35
F		
Family Favourites (not OS 3)	*Minerva*	£11
Farmer Giles	*Computer Tutorial*	£16
Farmer Giles II	*Computer Tutorial*	£16
Fervour	*Clares*	£19
FilmMAKER	*Silicon*	£60
– education price		£49
Find It!	*Appian*	£29
Fireworkz	*Colton*	**£125**
First Impression	*Word Processing*	£28
First Logo	*Longman*	£21
First Steps in Programming Acorn RISC OS Computers	*Sigma*	V0 £15
First Words and Pictures	*Chalksoft*	£21
First Words with Smudge, age 4+	*Storm*	£20
Fish, Jinxter and Corruption	*CIS*	£POA
Flexifile, KS3,4	*Minerva*	£69
Flight Path, age 9+	*Storm*	£27
Flight Sim Toolkit	*Simis*	£31
Flossy the Frog, KS1	*4mation*	£23
– site licence		£48
Fontasy	*ICS*	£15
– site licence		£45
Fontasy / DrawBender / Placard	*ICS*	£30
– site licence		£80
Font Directory	*Look*	£28
FontFX	*Data Store*	£9
– site licence		£70
Font Pack – Newhall, Starter, Symbol – each pack	*Acorn*	£35
Font Pack 1 – Paladin, Swiss B, Symbol B, Vogue	*RISC*	£47
Font Pack – Avant Garde, Bookman Pembroke – each pack	*CC*	£24
Food for Thought, age 7-16	*Sherston*	£16
F.R.E.D.	*GamesWare*	£17
Freddy's Folly (not OS 3)	*Minerva*	£8
Freddy Teddy	*Topologika*	£15
– Balloons & The Zoo	*Topologika*	£20
– The Playground	*Topologika*	£25
– The Puddle & The Wardrobe	*Topologika*	£20
Freddy Teddy's Adventure	*Topologika*	£15
Fun School 3	*Europress*	
– age -5, age 5-7, age 8+	each	£18
Fun School 4	*Europress*	
– age -5, age 5-7, age 7-11	each	£18
G		
Galactic Dan	*Fourth Dim*	£15
Games Wizard - The Apprentice	*GamesWare*	£17
Games Wizard - The Sorcerer	*GamesWare*	£24
Genesis II	*Oak*	£99
Genesis Plus	*Oak*	£60
Genesis Script Language	*Oak*	V0 £15
GenIndex	*Oak*	£39
GerberPlot	*Silicon*	£54
Giant Killer, age 10+	*Topologika*	£20
Giant Killer Support Disc	*Topologika*	£15
Glimpse	*Sherston*	£10
Gods	*Krisalis*	£19
Good Impression	*Word Processing*	£25
Granny's Garden	*4mation*	£23
– site licence		£48
Granny's Garden Resource Pack	*4mation*	£15
Granny's Garden Welsh (Gardd Nain)	*4mation*	£23
– site licence		£48
GraphBox	*Minerva*	£57
GraphBox Professional	*Minerva*	£104
Graphics on the ARM Machines	*Dabs*	V0 £15
Graph_IT	*Sherston*	£19
Greetings Graphics, draw/sprites	*Micro Studio*	£16
Gribbly's Day Out	*Coin-Age*	£19
GridIT	*Widgit*	£30
Grievous Bodily 'ARM	*Fourth Dim*	£15
GuardianPro	*Digital Phenomena*	£14
Guile	*Dream*	£22
H		
Hard Disc Companion	*RISC*	£38
Hatchback	*4mation*	£30
Haunted House	*Fourth Dim*	£20
Hearsay II	*RISC*	£69
Heimdall	*Krisalis*	£22
HelixBasic	*PDK*	£79
!Help 3, age 13+	*Sherston*	V0 £11
HeroQuest	*Krisalis*	£22
Hilighter, age 8-16	*Sherston*	£32
History Costume, sprites	*Micro Studio*	£16
Holed Out Compendium	*Fourth Dim*	£18
Home Accounts	*Minerva*	£34
House of Numbers	*Chalksoft*	£20
Hoverbod (not OS 3)	*Minerva*	£11
Humanoids and Robotix	*CIS*	£POA
I		
Ibix the Viking (not OS 3)	*Minerva*	£11
I²C SWI	*Baildon*	£15
– bought with Oddule		£5
Illusionist	*Clares*	£69
Illustrators' Graphics, draw/sprites	*Micro Studio*	£16
Image Animator	*Iota*	£59
Image OCR	*Iota*	£POA
Image Outliner	*Iota*	£72
Imagery	*Palette Studio*	£65
Imagine Version 2	*Topologika*	£39
Impact!	*Circle*	£47
Impact! Demo	*Circle*	£2
ImpactPro	*Circle*	£64
Impression + free upgrade to Publisher	*CC*	**£115**
– network version		£650
– site licence		£540
– extra hardware key for sites only		£15
– extra manual for sites only		V0 £8
Impression	*Dabs*	V0 £14
– with disc		£17
Impression Borders	*CC*	£19
Impression Business Supplement	*CC*	£39
Impression Junior + free upgrade to Style	*CC*	£63
– site licence		£435
– extra manual for sites only		V0 £7
Impression Publisher	*CC*	£135
– OPI Supplement		£225
Impression Style	*CC*	£95
Insight	*Longman*	£59
Instigator	*Dabs*	£36
Interdictor 2	*Clares*	£26
Investigator III	*Vertical Twist*	£48
IronLord	*UBI Soft*	£14
Isca – Life in a Roman Town, KS3	*ESM*	£34
Isle of Wight	*Computer Tutorial*	£20
Ixion	*GamesWare*	£17
J		
Jahangir Khan Squash	*Krisalis*	£9
James Pond	*Krisalis*	£19
James Pond 2 - RoboCod	*GamesWare*	£21
Jet Fighter	*Minerva*	£10
Jiglet	*4mation*	£19
Jigsaw	*4mation*	£19
Junior Database	*Iota*	£45
Junior PinPoint	*Longman*	£25
K		
Karma	*Periscope*	£20
Keyboard Player	*Chalksoft*	£17
Keyboard Trainer, KS2-4	*Minerva*	£74
Keylink Prolog	*Keylink*	£69
Keystroke	*Quantum*	£28
KiddiCad	*Oak*	£59
Kid Pix, KS1,2	*ESM*	£37
Killerbugs	*CIS*	£POA
Killerbugs, Serpents & Humanoids and Robotix	*CIS*	£POA
Knowledge Organiser 2	*Clares*	£79
Krisalis Collection	*Krisalis*	£21
L		
LabelBase	*Digital Phenomena*	£49
Landmarks – Aztecs, Civil War, Columbus, Egypt, Elizabeth I, Rain Forest, Second World War / Victorians each	*Longman*	£21
Last Days of Doom & Hezarin	*Topologika*	£17
Last Ninja	*Superior*	£19
Lemmings	*Krisalis*	£19
Lemmings II (Tribes)	*Krisalis*	£22
Letters and Pictures	*Chalksoft*	£18
Lexicon – French, German –each	*Stallion*	£33
Lexicon – Russian	*Stallion*	£42
Limpets	*Computer Tutorial*	£17
Linkword – French, German, Spanish – each	*Minerva*	£34
Little Red Riding Hood, age 5-8	*Selective*	£13
Logo	*Longman*	£55
LogoPlotter	*Longman*	£20
Lotus Turbo Challenge 2	*Krisalis*	£19

Maddingly Hall	Minerva	£8
Mad Professor Mariarti	Krisalis	£9
Magic Pockets	Renegade	£21
Magpie	Longman	£50
Mah-Jong, Crisis & Fireball	CIS	£POA
Manchester United	Krisalis	£9
Manchester United Europe	Krisalis	£19
Maps and Landscapes 1	Chalksoft	£19
Maps and Landscapes 2	Chalksoft	£19
Mark Master	Chalksoft	£67
Master Break	Superior	**£8**
Masterfile (Version 3)	RISC	£43
Maths Sieve	Computer Tutorial	£16
Mayhem	CIS	£POA
Mayhem, CardMania, E-Numix	CIS	£POA
Mazes, drawfiles	Micro Studio	£16
Mental Maths & Memory Magic	CIS	£POA
MicroDrive Designer	CIS	£POA
MicroDrive Designer, MicroDrive II & Chequered Flag	CIS	£POA
MicroDrive II	CIS	£POA
Micro Music	Fisher-Marriott	£19
MicroSpell 3.XX	David Pilling	£5
MicroStudio, age 7+	EMR	£67
Micro Trader Accounts	PRES	£270
MiG-29 Fulcrum	Krisalis	£9
Military History, sprites	Micro Studio	£16
Minotaur	Minerva	£8
Missile Control	Minerva	£8
Mogul	Ace	£25
Money Matters	Triple R	£15
Monotype Fonts (Pack 1)	Look	£76
Morpheus	Oregan	£29
Movaword	Chalksoft	£17
MultiFS	Arxe	£27
Multistore, KS3,4	Minerva	£105
Music Box	Toppologika	£31
Myth of Moby Dick	Toppologika	£27

Nature Graphics, draw/sprites	Micro Studio	£16
Naughty Stories (5-7) (set of 6)	Sherston	
– Volume 1		£44
– Volume 1 primary site licence		£99
– Volume 2		£44
Navigator	Topologika	£44
Nebulus	Krisalis	£19
Newton	Longman	£18
Night Sky	Clares	£63
Noddy's Big Adventure	Jumping Bean	£19
Noddy's Playtime	Jumping Bean	£19
Noot	4mation	£41
Noot Art Disc	4mation	£10
Notate	Longman	£50
Note Invaders	Chalksoft	£20
Number 62 Honeypot Lane	Resource	£29
Numbers and Pictures	Chalksoft	£18
Numberscope	Fisher-Marriott	£19
Number Tiles	Topologika	£29
Number Zoo, age 3-6	Selective	£14
Numerator	Longman	£33
Numerator Chaos	Longman	£18

Oak Logic	Oak	£79
Oak PCB	Oak	£79
Oh No! More Lemmings (requires Lemmings)	Krisalis	£15
Ollie Octopus' Sketchpad, age 4+	Storm	£14
Omar Sharif's Bridge	Krisalis	£22
Orion	Minerva	£8
Orrery	Spacetech	£93
Ovation	RISC	£84
Overload	Clares	£13

Pacmania	Krisalis	£9
Padlock	ICS	£10
– site licence		£30
Pandora's Box	Fourth Dim	£18
Pappus	Computer Tutorial	£17
Paradroid 2000	Coin-Age	£20
Payroll Manager	Silicon	£79
PC Emulator 1.8	Acorn	£95
PDT	Oak	£149
Pendown	Longman	£46
Pendown Etoiles	Longman	£46
Pendown Outline Fonts	Longman	£19
Pendown Plus	Longman	£67
Personal Accounts V2	Apricote	£29
Perspectives	TechSoft	£54
Pesky Muskrats	Coin-Age	£19
Phonic Games	Fisher-Marriott	£28
Photopia	CIS	£POA
Picture Book	Triple R	£15
Picture It!	Appian	£29
– Topic discs	each	£9
PIMS	Longman	£339
PinPoint	Longman	£84
– site licence		£340
PipeDream 3	Colton	£72
PipeDream 4	Colton	£97
PipeDriver Dot 1	ICS	£10
Pipe Mania	Empire	£18
Pirate, age 8-14	Chalksoft	£19
Placard	ICS	£10
– site licence		£30
Plague Planet	Alpine	£13
PlayBack	RISC	£18
Play It Again Sam 1	Superior	£20
Play It Again Sam 2	Superior	£20
Plot	Clares	£POA
Podd, KS1,2	ESM	£27
Podd – Welsh, KS1,2	ESM	£40
Polyominoes	Topologika	£24
Populous	Krisalis	£22
Poster	4mation	£75
PowerROUTER	Silicon	£159
Powermonger	Krisalis	£22
Prehistoric Animals, sprites	Micro Studio	£16
Premier	Circle	£71
– DataBase	Circle	£25
– WordProc	Circle	£25
Presenter GTi	Lingenuity	£66
PrimeArt, KS1-4	Minerva	£68
PrimeMover, KS2-4	Minerva	£75
PrimeSolver, KS1-4	Minerva	£POA
PrimeWord, KS2-4	Minerva	£51
Printer Drivers, RISC OS: Canon BubbleJet, Canon LBP, Canon PJ1080, ColourCel, Epson JX, Epson ESC-P2, HP, Integrex 132 – each	Ace	£19
Deskjet 500C, Epson / Star colour – each	RISC	£15
ProDrivers: Canon LBP8, Epson ESC-P2, HP Colourjet – each	Ace	£37
TurboDrivers: Canon, Epson Stylus 800, HP – each	CC	£42
ProArtisan 2	Clares	£102
ProCAD, KS4	Minerva	£394
Programming in ANSI Standard C on the Archimedes	Sigma	V0 £15
Prophet (requires 2 Mb)	Apricote	£145
Prophet Entry Level	Apricote	£10
ProSHEET	Silicon	£36
Protext	Arnor	£117

POSTAGE IS FREE
FOR PREPAID SALES IN THE UK

Provocator	Computer Tutorial	£15
Puncman 1 and 2	Chalksoft	£17
Puncman 3 and 4	Chalksoft	£17
Puncman 5 to 7	Chalksoft	£18
Punctuate	Xavier	£31
Punctuate!	Topologika	£20

QDBug	Vertical Twist	£68
QPaint	CIS	£POA
Quark	Oregan	£22
Quest for Gold	Krisalis	£19
QuicKey	ICS	£10
– site licence		£30

Raw Power II	GamesWare	£16
Really Useful CD Rom Vol.2	APA	£48
Real McCoy 2	Fourth Dim	£23
Real McCoy 3	Fourth Dim	£23
Real McCoy 4	Fourth Dim	£27
Recall, age 8-13	Sherston	£37
Redshift	Minerva	£10
RemoteFS Parallel Port	Atomwide	£50
Render Bender 2	Clares	£77
Rephorm	Oak	£47
Repton 3	Superior	£19
Resultz	Colton	**£97**
– secondary site licence		£470
Revelation	Krisalis	£9
Revelation 1	Longman	£33
Revelation 2	Longman	£65
Revelation 2 CD Rom	Longman	£84
Revelation ImagePro	Longman	£118
Reversals	Chalksoft	£17
Rhapsody 2	Clares	£44
Rhapsody 3	Clares	£78
Rhythm-Bed	Clares	£38
RhythmBox II, age 8+	EMR	£34
RiscBASIC Compiler	Silicon	£77
RiscForth Compiler	Silicon	£72
RISC OS 3 First Steps	Dabs	V0 £15
RISC OS 3 Programmer's Reference Manual	Acorn	V0 £99
RISC OS Companion Vol 1	Oak	V0 £49
RISC OS Style Guide	Acorn	V0 £13
RoboLogo	Silicon	£38
Round the World Yacht Race, age 9+	Storm	£25

Saloon Cars Deluxe	Fourth Dim	£25
– Deluxe Extra Courses		£14
S-Base 2 Developer	Longman	£193
S-Base 2 Developer Plus	Longman	£322
S-Base 2 Personal	Longman	£109
S-Base Network	Longman	£254
Schedule	Acorn	**£20**
Schema	Clares	£95
Schema 2	Clares	£POA
Science, drawfiles	Micro Studio	£25
Score Draw	Clares	£44
Scorewriter PMS Desktop, age 12+	EMR	£147
ScreenPlay	Widgit	£35
ScreenTurtle version 2	Topologika	£45
Search and Rescue, age 9+	Storm	£27
Seashore Guide, drawfiles	Micro Studio	£16
Seelinks – Ourselves, KS1.2	ESM	£31
Seelinks – Pond Watch, KS2	ESM	£37
Seelinks – Tourism, KS3	ESM	£55
Seelinks – Transport, KS2	ESM	£37
Sensible Soccer	Renegade	£21
Serenade	Clares	£106
Serpents	CIS	£POA
Settlement, KS3	ESM	£34
ShapeFX	Data Store	£10
ShareHolder	Silicon	£96
ShareHolder Professional	Silicon	£164
Shares	Apricote	£33
ShowPage	CC	£143
Shylock Gnomes, age 10-15	Selective	£16
Sim City	Krisalis	£22
Simon the Sorcerer	GamesWare	£31
SkyHunter	Longman	£21
Sleuth	RISC	£42
smArt	4mation	£50
smArt Aliens, Animals, Dinosaurs, Egypt, Europe†, Faces*, Fantasy, Fashion, Fiddles & Drums, Heraldry, Homes*, Leisure*, Look Smart, Smartoons, Trees and Gardens *English/French/German/Spanish/Welsh; †English/French/German; please specify each	4mation	£15
smArtFiler	4mation	£32
smArt Modern Languages	4mation	£19
Smudge the Spaniel, age 4-8	Storm	£20
Snippet (new version)	4mation	£32
Soapbox	Xavier	£34
SolidCAD	Silicon	£77
SolidsRender	Silicon	£77
SolidTools	Silicon	£204
– education price		£194
SongBook, age 3-10	EMR	£24
Sound Engineer, age 12+	EMR	£59
Sound-FX Maker	CIS	£POA
Sound-FX Maker & Photopia	CIS	£POA
Sounds & Rhymes	Xavier	£29
Spark	David Pilling	£5
SparkFS	David Pilling	£20
Sparkle	Morley	£59
Special	ICS	£10
– site licence		£30
Speech!	Superior	£18
Spelling week-by-week	Chalksoft	£20
Spex	ExpLAN	£98
Spheres of Chaos	Matt Black	£19
Splash, age 7-11	Sherston	£19
Splice	Ace	£34
Split an Image, age 7-16	Sherston	£16
Spoken Word	Wyddfa	£16
Spooler	Computer Tutorial	£9
Sporting Triangles	CDS	£19
SportsDay	Selective	£20
SportsPeople	Selective	£20
SpriteEd	Computer Tutorial	£17
SpySnatcher	Topologika	£12
Square Route	Computer Eyes	£16
Squirrel 2	Digital Services	£127
– site licence		£545
Squirrel C Developer's Toolkit	Digital Services	£96
Starspell Plus	Fisher-Marriott	£19
StartWrite	Icon	£55
StockPack	Topologika	£30
StoryBook, age 3-10	EMR	£59
Striker	GamesWare	£21
StrongED 3	Stallion	£22
Studio24Plus Version 2, age 11+	EMR	£149
Studio24Plus Version 3, age 12+	EMR	£210
Stunt Racer 2000	Fourth	£25
SUMthing	Resource	£24
SuperDump	Silicon	£20
Superior Golf	Superior	£14
SuperPlot	Silicon	£20
Swiv	Krisalis	£9

TABS	ExpLAN	£95
Talisman	Minerva	£8
Talking Pendown	Longman	£54
Talking Pictures	Wyddfa	£16
Talking Rhymes	Topologika	£37
Target Maths	Triple R	£15
Technodream (Nevryon 2)	Superior	£19
TechWriter	Icon	£159
Thinklink	Xavier	£29
ThinkSheet	Fisher-Marriott	£38
Thundermonk	Minerva	£11
Tiles	Brain Games	£19
Timeshare	Fisher-Marriott	£19
Timetabler	Minerva	£549
Time Traveller, KS2	ESM	£39
– Britain Since the 1930s, KS2		£33
– Create Your Own Timelines, KS2,3		£37
– Expansion, Trade and Industry, KS3		£39
– Making of the United Kingdom,KS3		£39
– Medieval Realms, KS3		£39
– Tudor and Stuart Times, KS2		£33
– The Victorians, KS2		£33
TinyDraw/TinyLogo	Topologika	£25
TinyPuzzle	Topologika	£20
Titler	Clares	£115
Tools Graphics, drawfiles	Micro Studio	£23
Topographer	Clares	£61
Touch Type	Iota	£38
Tower of Babel	Cygnus	£17
Trace	David Pilling	£5
Tracer	Midnight	£46
Transfer2	Apricote	£16
Transport, drawfiles	Micro Studio	£25
Trivial Pursuit	Krisalis	£9

ICS

051-625 1006

Turbo Type	CIS	£POA
Turbo Type, Sound-FX Maker, E-Numix	CIS	£POA
Tween	Ace	£35
TWO (Task and Window Organiser)	ICS	£10
– site licence		£30
TypeStudio	RISC	£38

Utility Disc 1	Data Store	£8
Utility Disc 2	Data Store	£13
Utility Disc 3	Data Store	£7
Utility Collection	Data Store	£21

Vector	4mation	£75
Victorians, age 7-11	Sherston	£POA
View»Mac 3	Human	£65
– Arc/Mac Cable	Human	£24
Viewpoints, age 7-11	Sherston	£37
Virtual Golf	Fourth Dim	£25
Visual Backup	Dabhand	£39
Vox Box	Clares	£44

Waiter	Digital Services	£35
Waterloo (not OS 3.1)	Turcan	£19
Whale Facts	Topologika	£20
Wordbank	Topologika	£20
Words and Pictures	Chalksoft	£19
WordWorks	CC	£36
Wordz	Colton	**£77**
World Geography Maps, draw	Micro Studio	£23
WorldMaker, KS3,4	ESM	£51
World Map Study, KS3,4	ESM	£64
World Wildlife, sprites	Micro Studio	£16
Worra Battle	Oak	£15
WorraCAD	Oak	£79

Xenon 2	GamesWare	£21

Yacht 2	Computer Tutorial	£49
Yacht 7	Computer Tutorial	£94

Zarch	Superior	£14
Zelanites (not OS 3)	Micro Power	£15
Zool	Gremlin	£19

HARDWARE

COMPUTERS . . .

A3010 Action Pack	Acorn	£335
A3010 Learning Curve System	Acorn	£599
A3020 FD System	Acorn	£650
A3020 HD60 System	Acorn	£775
A4 2M FD System	Acorn	£1350
A4 4M HD60 System	Acorn	£1650
A4 Battery Pack	Acorn	£53
A4 Shoulder Bag	Acorn	£37
A5000 2M HD80 Multiscan System	Acorn	£1225
Pocket Book	Acorn	£POA
– Class Pack		£POA

PRINTERS . . .

A4-1200/1 Direct Drive Laser Printer	Calligraph	£989
Bubble Jet BJ-10sx	Canon	£187
Bubble Jet BJ-10sx + TurboDriver	Canon/CC	£219
Bubble Jet BJ-230	Canon	£315
Bubble Jet BJ-300	Canon	£325
Bubble Jet BJ-330	Canon	£380
Bubble Jet BJC-600 + TurboDriver	Canon/CC	£535
Bubble Jet BJC-800 + TurboDriver	Canon/CC	£1374
DeskJet 500C	Hewlett-Packard	£279
DeskJet 510	Hewlett-Packard	£235
DeskJet 550C	Hewlett-Packard	£455
Laser Direct HiRes4 + Impression	CC	**£799**
– 250-sheet Paper Cassette		£99
Laser Direct HiRes8 + Impression	CC	**£1050**
Laser Direct HiRes Board	CC	£325
New toner cartridge for Canon LBP-4		£59
New toner cartridge for Canon LBP-8		£75

For ordering details please turn to page 3

ICS

051-625 1006

SCANNERS, DIGITISERS . . .

Colour Converter	Lindis	£145
Eagle M2	Wild Vision	£295
FaxScan	Spacetech	£94
GreyHawk	Wild Visiion	£98
Handipad	TechSoft	£193
Hawk V9 MkII Hardware Dithered	Wild Vision	£198
HiVision colour	HCCS	
– A3000 External		£157
– A3000/3010/3020/4000 internal		£144
– A5000/400300		£144
iMage (Sharp JX-100)	Irlam	
– for A5000		£490
– for other computers		£589
Image Scanner	Iota	£383
– Colour Upgrade Kit	Iota	£239
– Fast Parallel Card	Iota	£98
Pineapple Colour Video Digitiser	Pineapple	£195
– A3000 boxed	Pineapple	£230
ProImage (Epson GT6000)	Irlam	
– for A5000		£989
– for other computers		£1089
Scan-Light A4	CC	£277
Scan-Light 256	CC	£185
– A3000 External	CC	£190
– A3000 internal	CC	£190
Scan-Light Professional	CC	£565
– as above + SCSI interface	CC	£699
Scan-Light Video	CC	£208
– A3000 Series internal	CC	£208
Spectra	RISC	
– A3000 Series / A4000 Internal		£545
– A3000 External		£555
– Archimedes / A5000		£545
Vision colour	HCCS	
– A3000/3010/3020/4000 internal		£96
– A3000 external		£109
– A5000/400/300		£96

MISCELLANEOUS. . .

386 PC Expansion Card 25 MHz	Aleph One	
– 1 Mb		£POA
– 4 Mb		£POA
486 PC Expansion Card	Aleph One	
– 1 Mb		£POA
– 4 Mb		£POA
4-slot 4-layer Backplane	IFEL	£52
5315 Monitor	Aydin	£425
A300/400 Fan kit	ICS	£15
A3000 Expansion Box	Wild Vision	£135
A5000 Fitting Kit for second hard disc	ICS	£15
AnDi Oddule	Baildon	£39
Arckey Function KeyStrip Holder	ICS	V0 £3
– pack of 4		V0 £10
ArcNET	ACS	£69
ARM3 ‡	Aleph One/IFEL	£165
Arm_Stick	Arm_Tech	£28
ColourBurst	State	£374
ColourCard Gold	Wild Vision	£225
– A3000 External	Wild Vision	£225
Dongle Dangle with screw fittings	ICS	£6
Ergo-keyboard	Castle	£99
Fan filters (pack of 10) (not A5000)	ICS	£6
Floating Point Accelerator (A5000 + A540)	Acorn	£93
Floppy Discs, 10 × 3½" High Density		£10
Four-Colour Refill Kit		£30
HiPoint Mouse for A4	Genius	£49
I²C Adaptor	Baildon	£10
I²C SWI (enhanced IIC_Control)	Baildon	£15
– bought with AnDi Oddule		£5
ideA Removable Hard Disc Fitting Kit for A5000	ICS	£25
Microlin fx Pocket Fax Modem	Pace	£179
Micro Mouse	Clares	£26
Midi Expansion Card	Acorn	£80
Monitor Stand for A3000	ICS	£21
Mono/SCSI	Atomwide	£48
Podule Case for A3000	HCCS	£16
Power Pad (Dual)	GamesWare	£34
Power Pad (Single)	GamesWare	£25
Printer Port Sampler	Vertical Twist	£39
Printer/SCSI	Atomwide	£74
Publishing Pack	CC	£475
Revolution CD-ROM	Morley	£295
Revolution Pro (for SCSI system)	Morley	£435
RISC OS 3 Carrier Board for A310‡	IFEL	£21
RISC OS 3 Upgrade	Acorn	£75

Do you

use an A5000?
need to back-up data quickly?
need to carry data from one computer to another?
wish you could lock important data away easily?

Could you use 105 Mb floppy discs?

We've got some. They should really be called removable hard discs, but the difference is academic. Just install one of our SyQuest kits in your A5000 as though it were a second floppy disc drive. Now you can use 105 Mb removable discs as if they were fast floppies.

Removable discs cost about the same per megabyte as traditional floppies. Our complete package includes a drive, a fitting kit and one 105 Mb disc, formatted and tested. No soldering is required.

Each ICS kit also contains a special version of Wizzo - our own IDE filing system on rom. Acorn's filing system does not support removable hard discs (you would need to reset the machine every time you removed a disc).

Only Wizzo supports the SyQuest option.

WIZZO (it's magic)

And gives you disc partitions, password protection, and the ability to access more than 512 Mb of storage.

WIZZO SYQUEST COMPLETE PACKAGE £335

ADDITIONAL 105 MB DISCS £60 EACH • FITTING KIT ONLY £25

Wizzo5 owners: please return your rom in its original packaging and deduct £10.

Seal 'n Type spill-proof Keyboard Covers		
– Archimedes / A5000	Kador	£14
– A3000	Kador	£14
TouchWindow	Lindis	£234
Whisper Fan Quietener (for A300/A400 series only)	ICS	£15
Wizzo IDE Filing System on rom	ICS	
– Wizzo4 for A4		£POA
– Wizzo5 for A5000		£39
Wizzo SyQuest Complete Package		£335
– Extra 105 Mb Disc		£60

MEMORY . . .

Fitting extra unless otherwise stated
† Fitting fairly easy ‡ Fitting needs expertise

A3000 2 Mb Upgradable †	Atomwide/IFEL	£58
A3000 4 Mb †	Atomwide/IFEL	£120
A3010 1-2 Mb		£45
A3020 / A4000 2-4 Mb †		£80
A310 2 Mb Upgradable soldered ‡	IFEL	£94
– as above + MEMC1a		£119
– as above + MEMC1a + fitting		£149
A310 4 Mb soldered + MEMC1a ‡	IFEL	£159
– as above + fitting		£189
A5000 2-4 Mb †	Atomwide	£85
A5000 2-8 Mb including fitting	Atomwide	£500
A5000 4-8 Mb including fitting	Atomwide	£391
A540 4 Mb †	Acorn	£238

HOW TO ORDER

VAT: Zero-rated items are marked V0. UK customers please add 17.5% to all other prices. EC customers outside the UK (including BFPO) please do the same unless you are VAT registered, in which case quote your international VAT number. Ours is GB 595 7258 84.

CARRIAGE IS FREE WITHIN MAINLAND UK IF YOU PAY ON ORDERING.

Overseas carriage: If you are paying by credit card we will add airmail and insurance at cost. Otherwise please add £6 (Europe) or at least £12 (elsewhere) for each software item and send a pounds sterling bank draft payable at a London clearing bank, or Eurocheques for not more than £100 each.

Credit cards are welcome. We do not charge your account until your order is fulfilled. Your name and address must be as known to the credit card company. If you are leaving an order on our answering machine please include your telephone number, the expiry date of your card, and your calculation of the total payment due. We will make no charge for credit card commission unless we have informed you first.

Official orders are welcome from UK government and educational institutions. Payment is due in 14 days. Invoices are subject to carriage and late payment charges.

Site licences are available for most products. Please check our prices.

All products, prices and specifications are offered in good faith and are subject to change without notice. We process all orders immediately, but suppliers do sometimes keep us waiting. Goods are guaranteed but we do not supply them on approval. Returns and cancellations can only be accepted by prior agreement and there may be a charge to cover the costs involved.

AUTHORISED ACORN DEALER

ICS (Ian Copestake Limited)

Dept AC18, 1 Kington road, WIRRAL, Merseyside, L48 5ET

Tel: 051-625 1006 Fax: 051-625 1007

E&OE D61 940112

LICENSED CREDIT BROKER

What's in a name?

ONE thing that seems to be missed about our so-called easy-to-use computer systems nowadays is the *metaphor*. What's a metaphor? Well it's like an analogy, only different. I'll show you what I mean:

People who are new to computers often have difficulty with the difference between *ram* and *hard disk*. Of course to the expert it's obvious because the expert understands the concepts behind the words, but when you don't understand what the words mean confusion results.

Between us Pam and I have developed an *analogy* which helps to make the differences clear and provides a way of getting a grip on the concepts – it goes like this:

Imagine that *you* are the computer and your hands are the *ram*. You can only hold, and work with, a certain amount (of whatever) at any given moment. That's ram, it's what you have to work with.

If you only had one hand you'd have less to work with, and doing some jobs would be harder. If you had four hands you could do more and with eight hands even more. And it's just the same with ram, the more you've got the more you can work on at any moment and the easier many jobs become.

So what's a hard disk? It's a bag or sack hanging on your belt, that you can use for storing things when you're not actually using them. However, it's a highly organised bag with separate compartments that you can label, and you can also add compartments within compartments – but there is a limit to how much it can hold.

A floppy disk is a similar sort of bag but it can't hold as much, and a CD-rom is a very very big bag which is supplied with lots of interesting things in the compartments, but you can only take things out to look at them – you can't put things into it.

Anyway that's an analogy, a thing which has similarities to something else and can be compared to show and explain those similarities.

Now a metaphor is different. According to Collins it's a *figure of speech in which a term is applied to something it does not literally denote, in order to imply a resemblance.*

In software the idea is that a *metaphor* is used to make it easier to understand what a particular program is all about. For example, in a database each record may be called a card so that you think of it as a card in cardfile box. Where you have a graphical interface you might even see a picture of a card.

When window systems were designed it was with the intention of making computers easier to control. To this end the metaphor of a desktop was used.

It works like this, the screen is the top of the desk and you can have documents overlapping on it. You can pick out a document, bring it to the top and work on it, then decide you need to look at a different one, bring that to the top, perhaps get some information off it then go back to the previous document.

If you're working on a Draw *document* you have a number of drawing tools – usually shown in the box on the side. These are metaphors as well, they imply a real world concept, like drawing a straight line – you pick a tool and use it.

However the original purpose of these concepts has been lost and, because it is no longer explained, the metaphor has just become more jargon. To a novice a desktop is that thing on the screen, but *why* is it called a desktop? No one explains, so it's jargon.

In the Acorn market even the system designers seem to have lost touch, and become confused, with *why* a metaphor is used. Because instead of storing documents in folders we have *directories* and that's the wrong word because it implies the wrong concept.

A directory is a place where you look something up to find where it is – and that's a programming concept. The right metaphor is a *folder* which you look inside to see if the thing you want is there. And Acorn are clearly confused because what is named as a directory is shown on-screen as a folder.

So my advice is this: If you're a programmer get your metaphor's straight and if you're a user ...good luck.

Steve Turnbull takes a look at what it all means

Steve Turnbull – Editor

Editor Steve Turnbull **Deputy Editor** Pam Turnbull **Art Editor** Alan Jones **Technical Editor** Mike Cook **Chief Sub Editor** Judith Chapman
Advertising Manager Emma Barr **Advertising Production** Barbara Newall, Wendy Binnersley
Advertisement Typesetting Alan Capper, Eddie Burke **Circulation Manager** David Wren

Tel: 0625 878888 (All depts.) 051-357 2961 (Subs.) Fax: 0625 850652
Published by: Europress Enterprise Limited, Europa House, Adlington Park, Macclesfield SK10 4NP.

europress ENTERPRISE

Chairman Derek Meakin
Managing Director Ian Bloomfield

Acorn Computing welcomes new program listings and articles for publication. All material should be supplied on disk, please enclose a stamped, self-addressed envelope, otherwise the return of material cannot be guaranteed. Contributions accepted for publication will be on an all-rights basis. ***Acorn Computing*** is an independent publication and neither the BBC nor Acorn Computers Ltd are responsible for any of the articles in this issue or for any of the opinions expressed.

ABC Member Audit Bureau of Circulation

© 1994 Europress Enterprise Ltd. No material may be reproduced in whole or in part without written permission. While every care is taken, the publishers cannot be held legally responsible for any errors in articles, listings or advertisements.

News Trade Distribution: Comag 0895 444055

Printed in the UK by BPCC Magazines (Carlisle) Ltd

ICS WIZZO (it's magic)

051-625 1006

The ideA range

ICS was the first company to offer IDE products for Acorns back in 1990; now they are the standard choice for new Acorn computers. Building on three years' experience we have continually improved our IDE filing system. It now offers the highest level of RISC OS compliance, and compatibility with at least 45 different hard discs tested by us. Can any other supplier make this claim?

Our IDEFS abolishes the RISC OS limit of 512 Mb, and offers extra features such as password protection, background operation, disc partitioning, and power saving (which allows some discs to stop spinning when idle).

Partitions can have different levels of protection. Family or pupils can access some of your files while you keep others safely out of their reach. Or you can simply protect the whole disc (reformatting is not required for this).

Our hard disc upgrade kits are based around two internal interfaces at present: IDEA3IN for the A3000 Series, and IDEARCIN for the A300/A400/A500 Series. All kits are designed to a high standard and include all the parts you will need.

IDEA3IN upgrade kits include an I²C expansion socket as standard. They come with a 2½" disc already attached, and are easy to fit once you have opened up your computer. You may safely take no notice of rumours still being spread that internal upgrades might not be safe in an A3000. We have adhered carefully to the guidelines in Acorn's technical specifications, and in three years have never come across a problem.

IDEARCIN upgrade kits provide a fast 16-bit link all the way from the computer to the hard disc. They can even be fitted to an A310 without a backplane – quite a cost saving. A second hard disc can easily be added later if required.

Interfaces and hard discs can also be bought separately. By shopping around you may even save a few pounds. But beware: not all IDE hard discs work with all interfaces, and if you have a problem it may be difficult to decide who should put it right. We recommend buying a complete kit from one source.

WIZZO is the name given to our IDE filing system when it is supplied as a single rom chip. Wizzo5 is for the A5000, and Wizzo4 is for the A4. You should buy a Wizzo if you need password protection or wish to use larger hard discs. (Wizzo4 has been delayed slightly – we are adding a feature to ensure compatibility with possible future A4 upgrades).

A Wizzo rom by itself will only produce a slight speed improvement. If you need speed in an A5000, fit an IDEARCIN interface instead. Up to 60% improvement can then be achieved, but this does depend which hard disc you use so do check with us first.

How to read our ideA product references

A number at the end is the nominal hard disc capacity in megabytes. We usually round this down, so the actual formatted capacity may be higher. All discs have auto-parking. Average access times vary but all are below 20 ms.

All prices shown exclude VAT and are subject to change without notice. The cost to us for hard discs can vary enormously from week to week – not always downwards! Your local dealer can obtain *ideA* products from us or from a distributor.

Archimedes A300/A400/A500 Series Internal Upgrades

Package includes formatted hard disc, ideA interface card, hard disc cradle and fittings, fan kit, replacement multi-purpose LED (power and drive status), manual with fitting instructions. Can be fitted to an A310 without a backplane. If a backplane is used it must be a 4-layer type. Easily fitted by most users.

IDEARCIN 40*	£175	IDEARCIN 330	£399
IDEARCIN 80*	£205	IDEARCIN 420	£499
IDEARCIN 170	£275	IDEARCIN 540	£650
IDEARCIN 240	£325	IDEARCIN 1000	£925

A3000 Series Fully Internal Upgrades

Package includes formatted hard disc mounted on ideA interface card, manual with fitting instructions. Fully internal, using internal expansion slot. Co-exists with floppy drive and memory upgrades. Fits the new 1992 computers. Easily fitted subject to Acorn warranty stipulations.

IDEA3IN 40	£175
IDEA3IN 80	£250
IDEA3IN 120	£299
A3000 FAN KIT (not usually required*)	£19

**Only required if the computer has been fully upgraded, e.g. with maximum memory AND Econet AND an external podule.*

Separates for hard disc upgrades

We can only guarantee the performance of ideA interface cards with hard discs we have tested ourselves, so please check if in doubt. If you are buying a hard disc for an A5000 please say so. If you intend to fit the disc in addition to an existing one we need to know the make and model of the existing disc. Acorn's interface does not support all makes of disc, and some models will work as a second disc but not on their own.

Hard discs on their own are listed as, for example, IDEA 80. An S at the end indicates a 2½" disc.

IDEARCIN (Archimedes Interface for Internal disc(s))	£60
IDEA3IN (A3000 Interface for Internal disc)	£75
ARCHIMEDES INTERNAL CRADLE KIT	£15
ARCHIMEDES A300 / A400 SERIES FAN KIT	£15
4-SLOT 4-LAYER BACKPLANE	£52
POWER CABLE FOR SECOND HARD DISC	£5
A5000 SECOND HARD DISC FITTING KIT	£15

IDEA40*	£125	IDEA330	£349
IDEA80*	£155	IDEA420	£449
IDEA170	£225	IDEA540	£600
IDEA240	£275	IDEA1000	£875

IDEA40S	£115
IDEA80S	£190
IDEA120S	£239

WIZZO IDE Filing System on rom

Package includes rom, manual and fitting instructions. Compatible with RISC OS 3.0 and 3.1. Allows up to four logical partitions over two physical drives. Each partition appears separately on the icon bar and can have different password protection. Makes use of existing Acorn hardware for maximum compatibility, but works with a wider range of hard discs. Security breaches using ADFS can be prevented. Can be fitted easily by a competent user.

Available now: WIZZO5 for A5000	£39
Available soon: WIZZO4 for A4	POA

Quantity discounts available • Dealer enquiries welcome

** Lower-capacity 3½" discs are now very hard to obtain. Please check availability before ordering.*

ICS (Ian Copestake Limited), Dept AC16, 1 Kington road, WIRRAL, Merseyside, England, L48 5E

BETT '94 REPORT

THE MAJOR occasion at this year's show was the launch of the CD-Rom Group by the show's sponsors and the trade association for the educational supply industry BESA – the British Educational Suppliers Association (071-244 9232). The initial group consists of 15 leading UK CD-Rom publishers to promote and enhance CD-Rom value to education.

The BESA group aims to raise teacher awareness as well as encouraging CD-Rom publishers to produce appropriate and high quality material which is consistent and easy to use. They also aim to work for additional funding for this medium.

BESA research shows that over the whole of primary and secondary education there are an estimated 9,277 CD-Rom drives with more than 3,700 of these in secondary schools. However, while there are, on average, two CD-Rom drives in these schools, the primary sector is not as well catered for with 2,000 schools having access to, on average, one drive per school.

BETT also saw the launch of Acorn Access – a quick and simple way to network machines and share resources. Also known as peer-to-peer networking this entry-level network solution was previewed at Acorn World last year. It offers schools and small businesses a simple and cost-effective way to connect machines.

Installation is a matter of plugging in a card and connecting the cables. Access to remote disks and peripherals is done via the usual RISC OS menus and at the core is speedy and efficient Ethernet technology.

The product is *future proofed* by being part of AUN (*A*corn *U*niversal *N*etworking) so can be expanded/upgraded when you want. However, access is only available to RISC OS 3 users with at least 2Mb of ram.

Acorn have also released new versions of Level 4 Fileserver and TCP/IP Protocol Suite, offering industry standard connectivity. The Acorn stand also revealed a prototype PC link with access from the Acorn RISC OS environment to a PC-Novell NetWare server via a PC card. However, according to Acorn there are no firm plans to release this development as a product.

There were a number of control software and hardware developments on show, such as Commotion's (0908 218880) new serial control interface called The Command Centre, with eight bi-directional outputs at 6, 9 or 12 volts at up to 3 amps. It also has eight digital and four analogue inputs with an additional BBC analogue port where a further sensor box can be plugged.

Working with this is the Commander software, based on the earlier CoCo. It provides an accessible front-end and

➤

Inbound mission

Part of the international contingent at BETT '94 was a group of Acorn education dealers, educational consultants and software developers from Australia and New Zealand. This *Inbound Mission* was sponsored by the DTI with BESA as hosts.

Acorn Computing interviewed the dealers from both countries and despite the differences in education systems their situations are very similar to ours.

Of particular note was that in Australia Acorn machines are coming into their own as education discovers that support is important and that machines aimed at business, with hardware and software changes every year, are not cost effective for schools.

The best selling machine in both countries is the A4000 which initially surprised New Zealand dealers but retrospectively they realised that the three box solution made buyers think they were getting a *real* computer (!). The PocketBook has also proved very successful, with CD-Rom about to take off there as in England.

Asked what impressed them most about the Acorn machines, they said that Acorn and third party suppliers were willing to listen to comments and change the hardware/software accordingly. Sometimes this involved changing elements of programs to make them more suitable to the Australian and New Zealand markets.

● *The busy Acorn stand at Bett'94*

New records

SOLENT Computer Products (0954 789701) are now manufacturing and distributing the Oak Recorder II sound sampling system. Solent have been involved in the Acorn market for many years and were responsible for authoring the Archimedes Basic Compiler. The price of the Oak Recorder II system remains unchanged at £39.95.

Kerning power

A SECOND solution to kerning RISC OS 3 font data comes with PTW Software's (0329 281930) KernPlus. This gives an easy to use graphical interface to let you edit data as well as providing an automatic algorithm for the quick conversion of old RISC OS 2 fonts.

EverKern also comes with the package which forces the use of kern fonts throughout the desktop. The price is £15 – including VAT – and will be available at the end of the month.

Oops

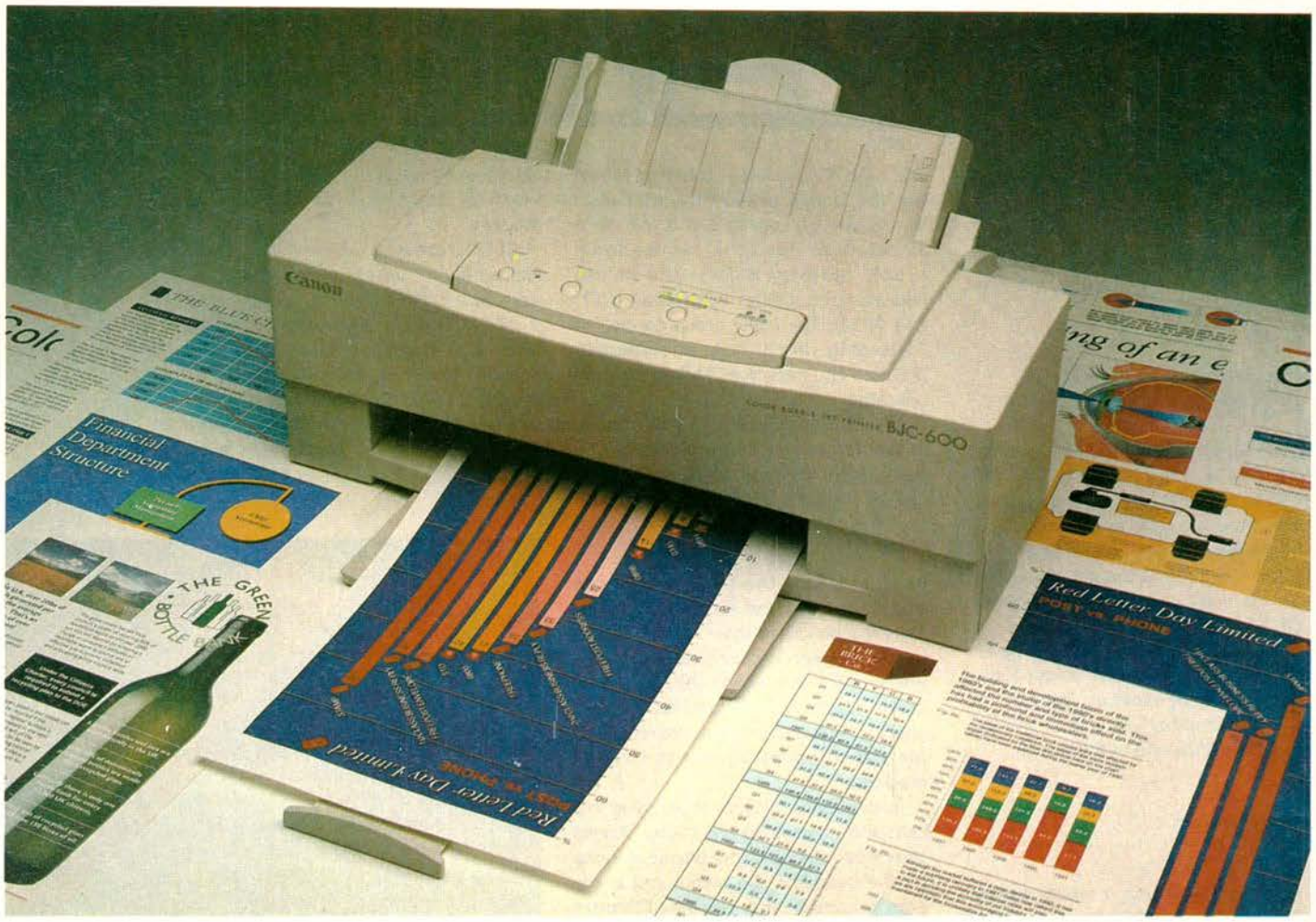
IN the January issue a typographical error implied that Longman Logotron had released, SIMS which is not correct. To set the record straight Longman Logotron launched *PIMS* in January, not *SIMS* which is a PC program.

Wise words

A NEW version of the Desktop Thesaurus has been released by RISC Developments (0727 843600). This supports antonyms and recognises over 17,450 keywords and contains around 200,000 carefully chosen alternative words.

The cost is £19 but existing users can take advantage of a free upgrade by returning their original disk with an SAE and £2 for carriage.

AFFORDABLE, HIGH QUALITY COLOUR PRINTING



The BJC-600 and Turbo DRIVERS

The brand new BJC-600 A4 plain paper printer from Canon, combined with Computer Concepts' 24-bit TurboDriver software, provides a key component in the full colour revolution that is occurring in the Acorn world.

RRP: £529.00 + £10.00 carriage + VAT (£633.32)
Min 4Mbytes RAM recommended.
Requires RISC OS 3.1

Some of its key features:

- Four colour CMYK inks for the best full spectrum of colours including real black.
- Separate ink cartridges for each of the colours - saves ink and money. It's even possible to change the ink cartridge part way through a page being printed.
- Ultra fast drying inks designed specially to prevent ink spread on plain paper - no other colour ink-jet printer can even come close to the quality obtainable from this printer.
- 360 dpi provides 40% more dots per square inch than 300 dpi printers - visibly better resolution.
- The high quality of print on plain paper means lower running costs than other colour inkjet printers.

The package comes bundled with the latest colour TurboDriver software (and printer cable). This provides the fastest possible print times and full control over half-tones. The software includes advanced grey component replacements and black generation algorithms to ensure accurate colour reproduction and good greyscales - it also avoids 'black flooding' that can occur with other printers.

Computer Concepts Ltd

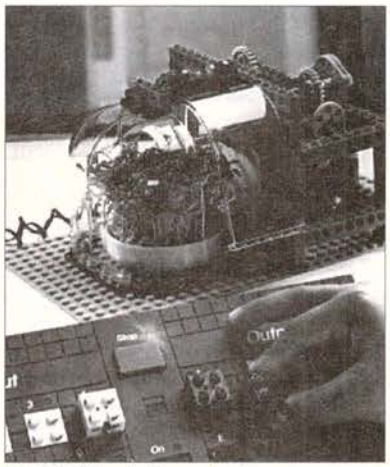
E&OE Prices & descriptions are subject to change.

GADDESDEN PLACE HEMEL HEMPSTEAD HERTS HP2 6EX TEL.: 0442 63933 FAX. 0442 231632
EMAIL: Info@CConcepts.co.uk

BETT '94 REPORT

operating language with the option of a flow-diagram mode. There is also full Boolean consistency, a learn command, an interrupt function, and it also accepts the use of variables. The starter pack of hardware and software costs £269.95.

LEGO Dacta (0978 296272) were very much in evidence with their new Control Lab software for Key Stages 3 and 4. The software is based on LCSI Logo and is a multi-tasking package with graphs, pictures, buttons and a simple word processor.



● *LEGO Dacta in control*

Publishing featured strongly this year with *Newshounds* from St Bede's Comprehensive Church School in Cambridge. They were creating professional daily newsletters from events at the show using ESM's (0223 357744) award-winning DTP package Desktop Folio. This was then printed from an A5000 using an offset printing press on the Acorn stand.

Also of interest to anyone involved in DTP is Irlam's colour hand scanner on show for the first time. Irlam (0895 811401) have developed interface cards and software to drive a range of colour hand scanners which until now have been restricted to the Apple Mac and PC machines. The first package is Image II with a 24-bit scan head costing £359.

Irlam are also developing a *stitching* utility to enable you to automatically join-up images scanned in strips. This will be available in April costing £15. Timed to coincide with the imminent launch of a new set of printer drivers from Acorn, Oak Solutions (0532 326992) are launching Repro. This is a professional tool which allows you to manipulate the exact translation of colours from screen to paper. For the best possible results Repro gives control over screen size, angles, gamma correction, grey balance and black removal and is priced at £50.

Longman Logotron (0223 425558) were demonstrating the PIMS (*P*rimary *I*nformation *M*anagement *S*ystem) management tool for primary schools and a series of data files for Pinpoint. In addition, they were showing Advantage, a simple spreadsheet and FirstPage, a DTP package with a range of easy to use tools to create pages easily.

Iota (0223 421542) have also expanded the use of their DataPower database to school administration purposes. With the help of Netherhall School in Cambridge they have developed an OMR (*O*ptical *M*ark *R*ecognition) module which will be on general release this Spring.

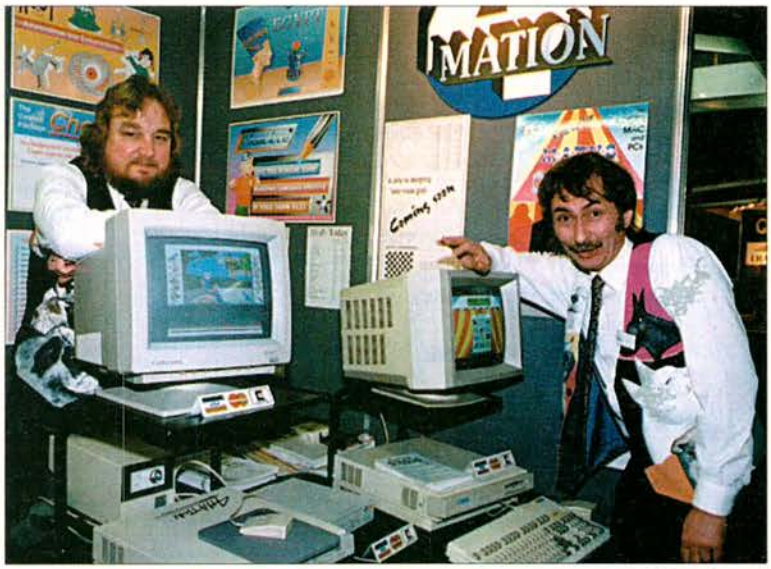
Using a reader such as a DRS CD200 series, papers can be marked automatically, and data matched and merged as required with information restricted via passwords. In addition SATs (*S*tandardised *A*ssessment *T*asks) can be assessed and personalised reports written, saving time.

Glimpses of work under development on the 4Mation (0271 25353) stand showed the Guardians of the Greenwood. This is a new adventure with a *green* theme which successfully matches photographic images with animation, adding to the atmosphere of a mix of fact and fiction.

Two other new heroes were to be seen too, Jenny the dog looking for a good home in Tudor England and the Dutch adventures of a Mouse in Holland.

Award-winning Topologika (0733 244682) were displaying Number Tiles for early Key Stages, developing arithmetic skills such as visual discrimination, understanding number progression, logic and problem solving. Due for release in about a month it's priced at £30.

However, their next release will be Talking Rhymes which has been delayed since its initial launch date of late last year. Worth watching out for is MiniSheet due around September. A very simple spreadsheet package, it teaches the basics of construction and graphing without entering into formulae, staying with simple addition and averages.



● *Neil Souch and Mike Matson of 4Mation*

● *Award-winning Sherston launched Talking Stories*

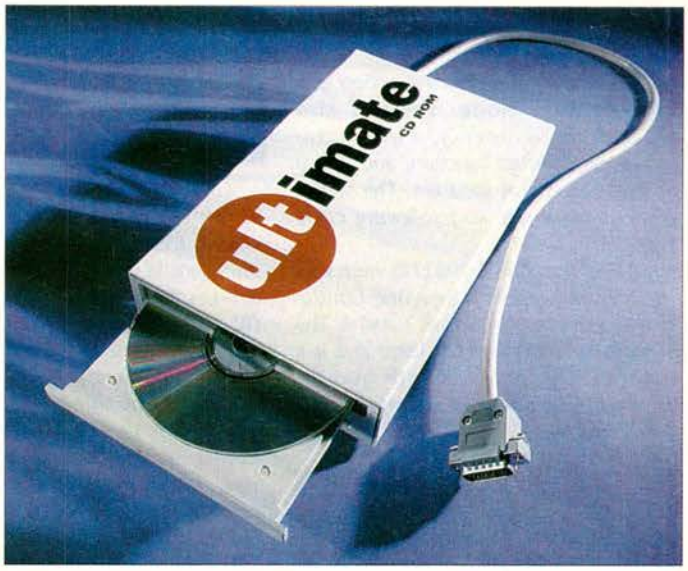
Acorn BETT Awards 1994

Primary Gold	ArcVenture III – The Vikings	Sherston Software
Primary Silver	Navigator	Topologika
Primary Bronze	First Logo	Longman Logotron
Secondary Bronze	Science1: Elements	ILP

CD-Rom drives slashed

MITSUMI drives caused the fall in price and increase in popularity of CD-Rom technology in the PC market and they look set to do the same for the Acorn platform thanks to HCCS (091-487 0760). Their Ultimate CD-Rom range uses the Mitsumi single and dual-speed drives priced at £229 an £289 respectively – including interface.

The drives come with an Ultimate CD-Rom MicroPodule which plugs into the Ultimate Expansion System. They are Acorn Replay, multi-session and PhotoCD compatible and are available to every model of Acorn 32-bit machine except the A4.



● *HCCS' CD-Rom Solution*

● *Resources and information are instantly available*

New boys

CREATIVE Curriculum Software (0422 340524) is a new education publisher who has immediately launched four products: Maths Card, Report Writer, Conjuguez and Langdale CD.

Maths Card is a tool aimed at those teaching mathematics at Key Stage 1 and 2. It allows you to quickly and easily produce unlimited numbers of maths worksheets for all levels and costs £49.

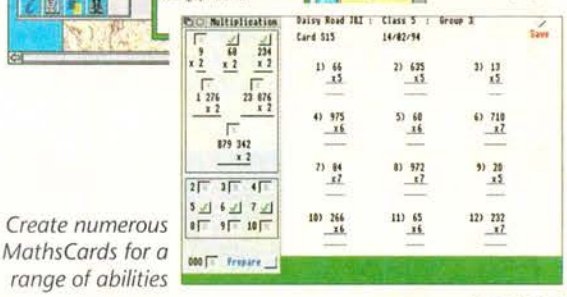
Also for teachers is Report Writer to help produce individual pupil reports and assessments based on Statements of Attainment and Support Statements. The single user version for Key Stages 1/2 or 3/4 is priced at £49 with site licences for four users for £89.

Conjuguez! – costing £25.49 – is aimed at students of all ages studying French. It contains a database of over 3,500 French verbs and their conjugations. This is the first commercial package written by 16-year-old Neil Coffey from North Halifax Grammar.

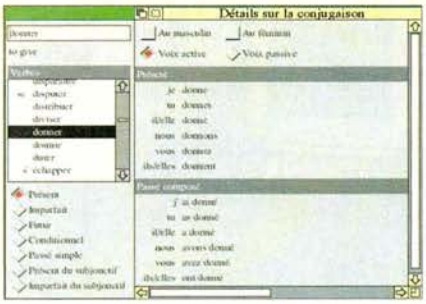
Finally there is Langdale, a CD-Rom package based on the Langdale valley in the Lake District. As well as a comprehensive resource with OS maps, statistics, transcripts, diagrams, charts and sounds there are over 800 aerial and ground photographs.

A massive resource for Key Stage 3 explored through eight applications where pupils can take the walks and see the views as well as venturing behind the scenes of human, physical and environmental geography.

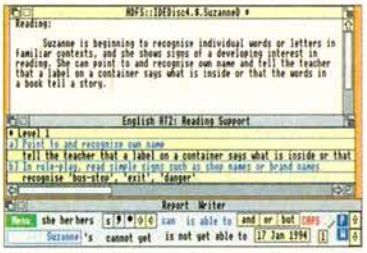
Langdale uses 250 *hot spots* which you can visit in the valley and on the surrounding hills. The CD costs £99 for a single user or £149 for a networkable multi-user version though you can buy the floppy disk based Stickle and River Projects separately for £89 each.



● *Create numerous MathsCards for a range of abilities*



● *Help for French students of all ages*



● *ReportWriter – a time saving and consistent aid for teachers*

● *CD-Rom packs*

Two-stage roms

FOUR new special price CD-Rom packs have been launched by Cumana (0483 503121) for secondary and primary education. This includes a CD-Rom drive and a selection of software chosen for both enjoyment and education – the Family Fun Packs 1 and 3 for the younger group with 2 and 4 for secondary school ages.

Packs 1 and 2 contain Cumana's latest 300 Series CD-Rom drive and interface. This is a multi-session PhotoCD-compatible drive which can also be use to play standard audio CDs. The others feature the 600 Series drive and SCSI card.

Software titles in the bundles include: Dictionary of the Living World, Creepy Crawlies, Image Warehouse, Grooves, Who Stole the Decimal Point?, Hutchinson's Electronic Encyclopaedia and the Times and Sunday Times Sampler disk.

Following TALKING PENDOWN *the software that speaks for itself . . .*

The Somerset Talking Computer Project Learning Materials . . .

Up to 37 months increase in reading age in just 6 hours work

. . . A phonic-based pack of materials to be used in conjunction with *Talking Pendown* - a wordprocessor complemented with "Speech" software - to help children with reading difficulties.

The book describes how *The Somerset Talking Computer Project* developed and used phonic-based materials to investigate the potential of the talking wordprocessor.

In little more than six hours tuition over a period of four weeks, a structured programme of work produced some remarkable results in pupils from a variety of schools across all phases of education.

Initial piloting results indicate:

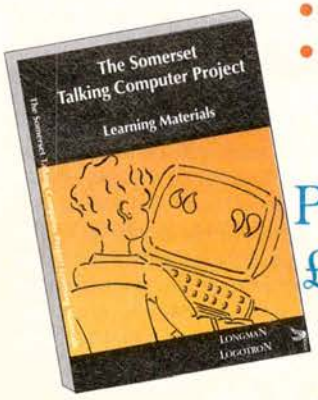
- an average increase in reading age of 8.3 months;
- best result achieved an increase of 37 months;
- an average short-term memory improvement of 16 months;
- recognised improvement in spelling;
- observed increases in concentration span and time spent on-task;
- enhanced self-esteem;
- subsequent transfer of skills to other curriculum areas.

The book includes:

- a résumé of the work undertaken in Somerset;
- the photocopiable phonic-based materials;
- advice about how to prepare, begin and proceed with the work;
- suggestions for monitoring progress;
- ideas for extending the work with pupils.

"Struggling readers in Somerset have recorded a year-and-a-half's progress in only four weeks as part of a new research project into the benefits of 'talking' computers"

Times Educational Supplement 19.2.93



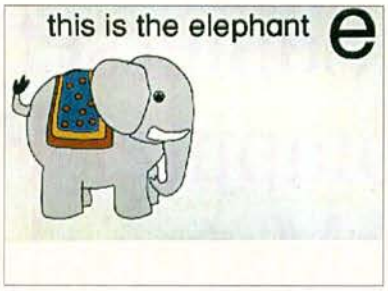
Price: £29.00 (+ p&p £3.53)

Longman Logotron
124 Cambridge Science Park
Milton Road
Cambridge, CB4 4ZS

Tel: (0223) 425558
Fax: (0223) 425349

Expanding world

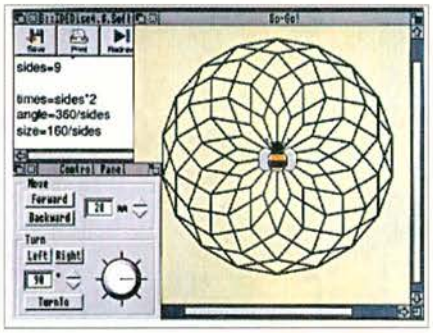
THIS year's Special Needs Village at BETT'94 was organised by NW Semerc (061-627 4469) who also released My World 2+2. The pack includes four disks, on the first is a simple jigsaw based on the alphabet, an easy writing screen, sentence building with words and building blocks and bricks. There are also simple picture building activities dressing Teddy and recreating the story of Goldilocks.



● *MyWord 2+2*

The second disk features some of the best samples from the My World 2 support packs where you can plan your own kitchen, make patterns from shapes and design your own gift tags. Activities from the Dinosaurs support disk is on the third disk giving children the ability to build their own prehistoric heroes as well as creating a board game.

● *Ready, steady, GoGo!*



The final disk comprises games such as solitaire and draughts plus town planning activities and pattern making. There are also resource materials such as weather maps and charts. The cost is £39.

Also making its debut is Go-Go! a simple turtle graphics program for teaching numbers, geometry and logic to primary and secondary, special needs pupils. The program costs £40 and comes with a variety of ready-made pointers. You can also add your own drawfiles and sounds.

There is also a selection of ordnance survey symbols, on-screen ruler and protractor as well as resources and activities for the teacher.

Holding on

ACORN are extending their special promotions on PocketBook and Schedule until 31 March. The PocketBook normally costs £212.72, the special offer puts this at £169.95. Schedule provides a combined diary, personal organiser and timetable and is available for the introductory price of £16.98 – the normal price is £42.51.

Existing PocketBook owners should take a look at Acorn Plotter, a graphic plotting application which comes on a solid state disk available from Acorn dealers for £29.95. Plotter has been designed to meet curriculum needs for Maths and Science in Key Stages 3 and 4.

It plots mathematical functions such as Cartesian and polar functions, inequality graphics and coordinate pairs. You can also use it with the PocketBook's Calc as a specialist graphical calculator.

In addition it allows tracing and dynamic recalculation of functions, zooming in or out or moving around graphs and saving, loading and merging of files.

Also for the PocketBook is PocketFS2 providing improved and enhanced software for the A-link, connecting the PocketBook to a desktop Acorn machine.

PhotoCD for all

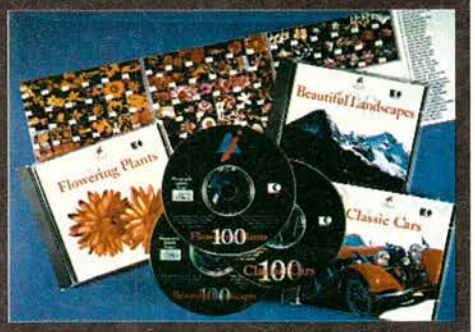
ACORN were showing off the finished version of their PhotoCD software at BETT. You can expect to see this bundled with all Acorn and third party SCSI cards or CD-Rom systems with CDFS 2.20, though you can buy an Acorn CDFS 2.20 upgrade kit.

The Acorn version of PhotoCD access software has been developed under licence from Kodak and will be on general release in February.

Hot off the mark with royalty free PhotoCD clip-art comes Andromeda (0235 529595). Each disk costs £37.50 and two are available now. *100 Classic Cars* shows 100 images from the National Motor Museum at Bealieu of pioneering vehicles from the 1894 Peugeot to the more sporty Ferrari F40 and Jaguar E-Type.

***100 Beautiful Landscapes* features views from all over the world from rolling British countryside to the Thai island used in the James Bond film Goldfinger. The *100 Flowering Plants* disk features the vibrant colours of flowers.**

Andromeda are also about to release *100 Classic Space Shots* and *100 Graphic Backgrounds*. All are saved to Kodak's PhotoCD specification and can be manipulated or loaded into programs such as Clares' ProArtisan II.



● *High quality images at your fingertips*

Computer aid

A NEW book has been published by the Dyslexia Computer Research Centre at the University of Hull (0482 465589) called Computers and Dyslexia. Edited by Chris Singleton it's priced at £10.95 and originated from a national conference organised in conjunction with the British Dyslexia Association in 1993.

The book aims to give an overview of the best in current technology and educational practice and previews developments in computer applications for dyslexia and Special Needs.

Too many games

RESEARCH conducted by BMRM for Acorn has highlighted parent fears about the potential long-term damage done to children by extensive playing of computer games. Of 593 people interviewed, 75 per cent thought children were spending too much time playing computer games with 60 per cent thinking games could be harmful.

Acorn see the perceived hazards as stimulating parents to make the computer a family affair with 75 per cent stating that home computing should be an activity for the whole family.

Acorn's Richard Percy commented, "Acorn commissioned the survey to examine the needs and concerns of computer users. The research clearly shows that families are worried about the effects of games-only machines in the home. People actually want a computer all the family can use which is capable of running video, animation, graphics, music, word processing, home accounts and much more."

leading products from Digital Services

Squirrel – the relational database for RISC OS

We believe this to be the finest database available for the RISC OS platform, and a match for many more expensive products on the PC and MAC.

Squirrel offers unprecedented ease of use, yet has awesome power. Tables can be created in minutes by novice users, whilst those experienced in its use never cease to be amazed by its depth of functionality.

Squirrel Single User	*£ 139.00*
Squirrel Multi User	*£ 556.00*
Squirrel 'C' Developers Toolkit	*£ 99.00*

Netgain – high speed application loader

Netgain is a real breakthrough in Econet technology which reduces the frustration of slow load times for applications.

With Netgain, applications installed on the network server are available to any Netgain configured client, who can load them at hard disk speed simply by clicking on the icon.

Compatible with Level 4 fileserver software.

Server Pack, including 10 user packs £ 200.00

Additional 10 User Packs £ 100.00

Armlock – hard disk security system

Armlock is a software only utility preventing unauthorised access to CMOS RAM or to designated files/directories on the hard disk of any RISC OS 3 computer. Unlike other security systems, Armlock does not require the hard disk to be partitioned into read-only and writeable areas.

ARMLOCK

Armlock Single User	*£ 35.00*
Armlock Ten User Licence	*£ 139.00*

Waiter – The RISC OS menu system

Waiter is a complete menu-building system for risc os. Powerful, easy to use, hierarchical menus may be created, complete with icons and descriptions, enabling novice users to locate, run and move between programs. Passwords can be attached to applications or entire menus. The system is ideally suited for use with hard disks or networks.

Waiter Single User £ 35.00

Waiter Site/Network Licence £ 139.00

Netgain for Ethernet – high speed file transfer

Netgain for Ethernet provides the fastest transfer rates of any network currently available on the RISC OS platform. Typical transfer rate from a standard Ethernet system is approximately 200K/sec but Netgain achieves up to 900K/sec. In addition to this transport throughput increase, intelligent caching and a general reduction in bottlenecks result in staggering reductions in load times for typical applications.

No more then 64k of RAM is taken from any workstation.

Server Pack, including 10 user packs £ 200.00

Additional 10 User Packs £ 100.00

Ethernet Card – high speed networking

The Digital Services AUN compatible ethernet card has been designed to provide maximum possible bandwidth on thin ethernet systems. It also incorporates two unique features: the computer's CMOS RAM may be password protected, thus preventing unauthorised personnel from tampering with the configuration, and secondly the Netgain for Ethernet client software is included in the ROM.

Mini expansion card for A3000/3020/4000 £139.00

Digistore

Digistore – tape streamer

Digistore is fast, flexible and TOTALLY reliable in operation. Friendly RISC OS software allows selective backup and restore. Backup commands may be included in your own programs.

Digistore can be connected to any RISC OS computer via a SCSI interface, and uses industry standard 1/4" tape cartridges.

250Mb £799.00 525Mb £899.00 1.64Gb £1249.00

All prices shown are ex-VAT, which is chargeable at 17.5% on all items for UK residents. No VAT is due on foreign orders.

An extra charge will be made for postage and packing on all items ordered from Digital Services.

digital services

9 Wayte Street, Cosham, Portsmouth
Hampshire PO6 3BS Tel 0705 210600

Moving on

RESOURCE are moving to: 51 High Street, Kegworth, Derbyshire DE7 2DA. Tel: 0509 672222. This is a move of county for Resource but they will continue to run the Resource IT Conference and Exhibition – 25 November 1994 – at Doncaster Racecourse.

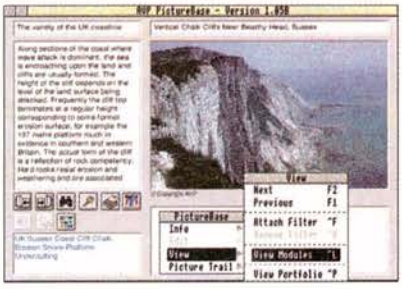
First release from the new base will be Supermarket which teaches coin recognition, addition, subtraction and multiplication of money. You can use Concept Keyboard, Touch Window or mouse, and as the program is for use with a variety of abilities each child can have his/her own setting, with the levels and parameters being set by the teacher.

You can choose between pictures of 40 different products and you can add your own drawfiles as you want – Supermarket will automatically scale them to fit. You can export the pictures too. Digitised speech is also used for atmosphere and positive reinforcement.

Also changing address are Oak Solutions who are moving to Dial House, 12 Chapel Street, Halton, Leeds LS15 7RN. Tel: 0532 326992. For the last nine months they have been operating from two sites in Leeds and Cambridge and this move brings the company together under one roof.

Picture it

● *PictureBase modules cover a range of topics...*



● *...with an intuitive and versatile interface*

AVP (0291 625439) have been compiling a series of multimedia resources under the all-encompassing title of PictureBase. Simply, this is a growing collection of text, graphics, photographs, sound and video on specific subjects.

The approach uses modules which *clip* together on a hard disk to build a visual database of your choice. You can customise databases adding your own text, keywords and so on.

Each module consists of about 20-50 images grouped by themes with accompanying descriptive text. All information can be printed or imported into other packages. Easy and sophisticated search facilities are also included.

You will need RISC OS 3 to access the PictureBase resources, at least 2Mb of ram and a hard disk. Alternatively the resources are available on CD-Rom and AVP will also put your selection of PictureBase modules on to a CD-Rom for you.

Subject areas covered include various Key Stages in: Geography, French, Physical Geography, Art, Science and History with such topics as Domestic Life in Victorian Britain to China 1911 to 1966. The average cost is £59 for a site licence.

DIY barcoding

KANG Software (071-637 7766) have launched !Barcodes, a fully RISC OS 3 compliant program producing EAN-8 and EAN-13 barcodes in drawfile format. These can then be dragged into Draw or into a DTP package.

EAN-8 and EAN-13 barcodes are used in package design and retailing. EAN-13 barcodes may have two or five digit add-on codes for magazines and books. Under the barcode is a number in OCR-B or A font. Barcodes are printed at the recommended EAN sizes or you can set a percentage enlargement or reduction or set your own size.

Printing uses the standard RISC OS printer drivers and is to EAN specification which has been fully tested using industry standard barcode readers. The cost is £85 – a saving on conventional barcodes suppliers where an individual barcode costs around £15.

Diary Dates

Acorn User Show
Date: 22-24 April 1994
Venue: Harrogate International Centre
Contact: Safesel Exhibitions (0737 814713)

MEMS'94 – Midi, Electronic Music and Recording Show
Date: 22-24 April 1994
Venue: Wembley Conference Centre, London
Contact: Westminster Exhibitions (0222 512128)

Spanish edition

FOLLOWING the release of ILP's (0532 461528) Directions 2000: French, comes, ¡En marcha for Spanish learners. It is very similar to the French title but feedback from users has meant some enhancements including a longer recording time for your speech and the ability to return to the main menu at any time.

RF design

STEVE Hunt (0604 858090) has developed a number of applications which will be of interest to both professional and amateur RF design engineers. They include a filter designer, a receiver noise figure/intercept point analysis tool, inductance *ready reckoner* and a comprehensive Smith Chart design aid.

A day for it

NEWNHAM Junior School in Ruislip have produced a calendar for 1994 using RISC Developments' Ovation. Each of the children have created *pen portraits* of themselves which have been scanned. The finished calendars were sold to parents and friends.

Revolution.
The new CD-ROM.
At only £299 + VAT

its pedigree may surprise you!

The Morley **Revolution** is the ultimate plug-in-and-go CD-ROM drive solution for Acorn 32bit computers.

This Revolutionary new system is the result of a unique Morley Electronics development, based around the latest CD-ROM drive from Sony. Developed specifically for the Acorn market, it is suitable for all Acorn 32bit desktop computers from the A3000 right up to the A540. There are no complicated setups or *commands. Merely plug in the interface and drive, switch on and you are ready to go. Simple and quick, the Morley **Revolution** offers an exciting solution for requirements in education, the home, industry and office environments. Current applications include encyclopaedias, dictionaries, newspapers, digitised video and sound, clip art and a host of other programs offering exciting learning possibilities that would not be feasible without CD-ROM.

The **Revolution** matches the capabilities of far more expensive drives. It is Replay, multisession and Kodak Photo CD compatible, operates via Acorn's CDFS and is compatible with existing hardware running RISC OS 3. It can also use all available RISC OS based CD-ROMs, as well as access DOS based discs and run them through emulation. It even plays audio CDs!

Contact us for more details about the Morley **Revolution** CD-ROM or place your order and join the **Revolution** now.

Sony is the registered trademark of the Sony Corporation of Japan.

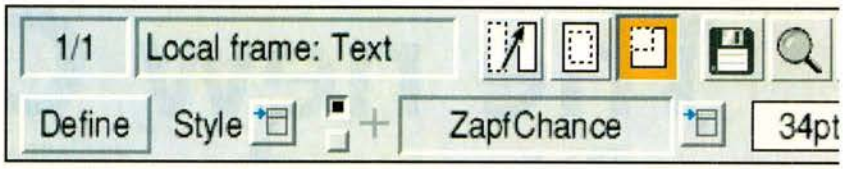
JOIN THE REVOLUTION NOW TELEPHONE

091 257 6355

MORLEY
E·L·E·C·T·R·O·N·I·C·S · L·T·D

Expanding Your Horizons

DEPT. AC/2, MORLEY HOUSE, WEST CHIRTON, NORTH SHIELDS, TYNE & WEAR NE29 7TY TEL: 091 257 6355 FAX: 091 257 6373



Putting on

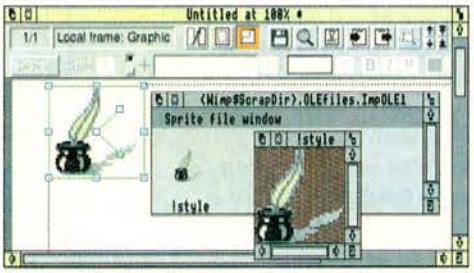
Bruce Goatly looks over the first of Impression's next generation

WHEN Impression and Impression Junior were launched several years ago they became Computer Concepts' big success story in the word processing and desktop publishing field. After several minor upgrades the first of their successors, Impression Style, has now appeared.

Inside the box we find, under assorted leaflets, no fewer than four manuals and a very useful quick reference card, as well as the six disks themselves – but, like Junior, no dongle. If you buy the program rather than upgrading from an earlier version you also receive a copy of *DTP at a Glance*, the beginners' guide to desktop publishing.

For your money you get not only Style itself but also Equasor (an equation editor), TableMate (a table editor) and WordWorks (an online help and dictionary/thesaurus application). Putting all this on your hard disk is made easy by an installation program – it's necessary too, because the software is supplied in a compressed form.

The installation process has a touch of Windows about it, telling you how much disk space – 4.2Mb – the complete package requires, letting you choose which items you want to install and informing you of progress. Installing all except the fonts takes only about seven minutes – not a bit like Windows.



● *With OLE you can edit a graphic direct from a Style document*

Screen and page layout

When you click in a Style window you immediately see the most obvious improvement over its predecessors – the toolbar. This gives you easy access to many of the features that you could only reach before through menus or key shortcuts. Even experienced users can benefit as it simplifies operations that don't have a short cut, such as applying a new text font.

The page layout facilities are almost identical to Impression II's, though master pages can now be given names and their format can be redefined at any time. The toolbar helpfully tells you the current chapter and page number and there's a new, snazzy zoom function based around Shift+Control, letting you expand your view on any selected area of the page.

For all those who felt that, in Impression, storing documents as applications was a waste of disk space and sprite memory, Style offers an alternative single-file document format, which also saves time on opening directories containing lots of documents. The Acorn standard shortcut of Control+F2 for closing a window is now supported, so experienced Impressionists have to be careful to use the new shortcut (Shift+Control+F2) to view the master pages.

Text handling

Impression's text handling has been improved in Style. Not only are effects and styles supported but defining and applying them has been made much simpler. The style editing dialogue has been effectively split up into five areas, conveniently replacing the long scrolling window.

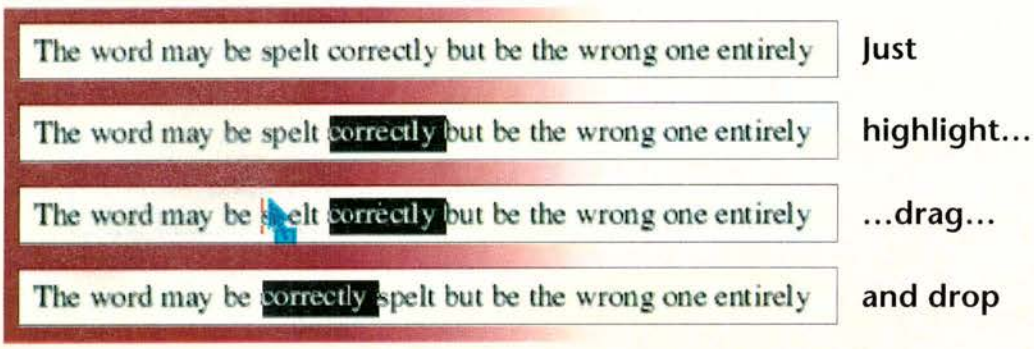
A new style can be defined by way of the ruler, simply by applying the desired effects to some text and clicking on the Define button – nice. Another plus point is that styles can be defined to apply at the paragraph level, saving the need to select a whole heading, for instance.

Auto-kerning under RISC OS 3 is supported, and tracking can be applied as an effect. Mail merging is also included as part of the package – this is easier to use than the earlier Business Pack version was, but still not quite as intuitive as, say, EasiWriter's.

You can apply italic and bold effects without having to choose them categorically from a list of fonts. The Insert submenu now has more entries, allowing automatic numbering of paragraphs.

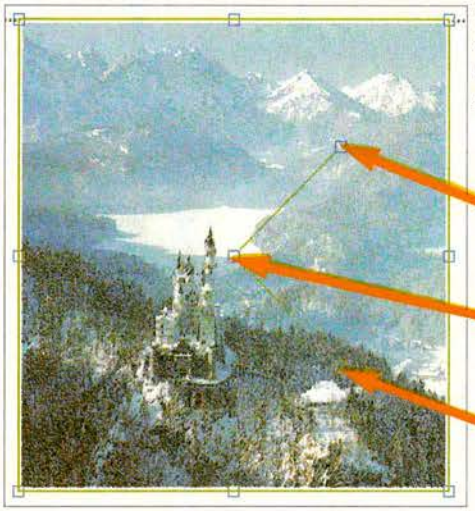
The key shortcuts are extensive, even though those accustomed to the old ones will have to forget some of them or suffer surprises. On the whole the changes are for the better

● *Text editing made ridiculously simple*



● *Style's extensive new toolbar*

the Style



● *The three handles inside a Style graphic frame*

– for example, Control+B for bold and Control+I for italic, which is an *industry standard* – but the one that took me aback was the use of Shift with the cursor keys.

In most applications from Edit upwards this moves the cursor a word at a time, but Style uses it for selecting text areas. I concede its usefulness but I'll miss the convenience of the old ways.

Drag and drop text editing is now fully supported within a document, which makes editing very easy. It would be nice to be able to export text in this way from Style to other applications, as DataPower as the EasiWriter family can.

Graphics

Graphics handling in Style is much neater than in Impression II now that the active area of the frame is concentrated in three handles dedicated to rotating, panning and resizing the contained graphic. This eliminates the annoyance of accidentally panning a graphic around in its frame, which I always found frustrating.

With the new Quality submenu you can define how Draw and ArtWorks will be rendered, from outline to full anti-aliasing. Style can handle all kinds of Acorn sprites, drawfiles and ArtWorks files, and TIFF files can be imported for those wanting to transfer illustrations from PCs or Macintoshes.

A new buzzword in Acorn circles is OLE – Object Linking and Embedding – which in Style's case means that Control+double-click on a graphic starts up the appropriate application and transfers the graphic into it ready for editing. When you've finished making changes, saving the graphic transfers it back into the Style document.

Finding an AudioWorks sample among the tutorial files I couldn't resist dropping it into a frame in a Style document – which happily accepted it. Even in the absence of AudioWorks on my system, a Shift+double-click on the frame played the sample back – possibly a pointer to the future of OLE?

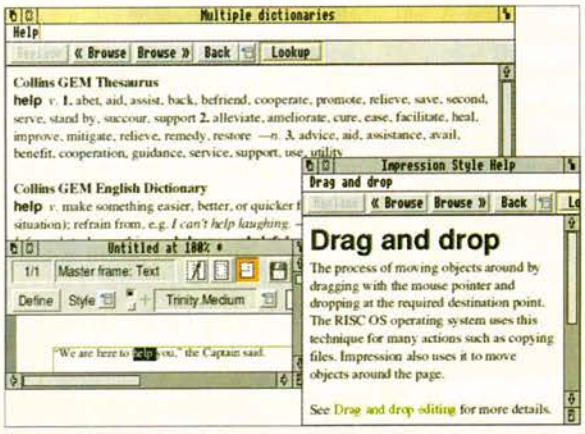
Bundle of joy

The other software that comes with Style adds to the value of the package substantially. Equasor is an equation editor that lets you build up mathematical expressions ready for importation into Style as a graphic. It can generate both drawfiles and Equasor-format files, the advantage of the latter being that they can be re-edited in Equasor at a later time.

The program calls for a fair amount of patience to achieve high-quality results, and there is no sense of integration with Style in the way that TechWriter achieves. But it's certainly better than doing maths without any such help.

TableMate is a simple but effective application that takes a lot of the fuss out of making tables for use in Style. You can either set up a complete table and import it as a graphic – it can always be re-exported via OLE for further editing – or generate just the text and the necessary styles ready for use in Style.

The last and most valuable addition is WordWorks, which uses the data from the Collins Gem Dictionary and Thesaurus to provide an extensive and integrated word-aid system. But it also provides on-line help for Style itself, making the package even more accessible.



● *WordWorks provides dictionary, thesaurus and online help all in one*

PRODUCT SPOTLIGHT

Product: Impression Style
Price: £99 (upgrade from Impression II or Junior: £29)
Supplier: Computer Concepts, Gaddesden Place, Hemel Hempstead, Herts HP2 6EX.
Tel: 0442 63933

Summing up

With its completely re-written manual and new features such as the toolbar and the hypertext help system, Impression Style feels almost like completely new software, even though the underlying differences from Impression II aren't enormous.

For the former price of Junior you can now buy a package with all the power of Impression II – and more – and one that is much friendlier as a wordprocessor. Add in the three extra packages, and you end up with unbeatable value.

ArtWorks

Version 1.5

The latest version now includes full support for 24-bit sprites, making it the first Acorn graphics package to support full colour sprites. It is also compatible with the new graphics filter system used by Impression and includes a filter for TIFF files (the industry standard format). ArtWorks now includes the ability to print and separate these full colour images. Finally 1.5 is also a new 'fast load' version of ArtWorks - this is an advantage to all users but particularly useful for relatively slow filing systems such as CD or networks.

"ArtWorks is quite simply the best vector drawing software on the Arch"
Computer Shopper

"It's the best ever art program to hit the Archimedes".
Archimedes World.

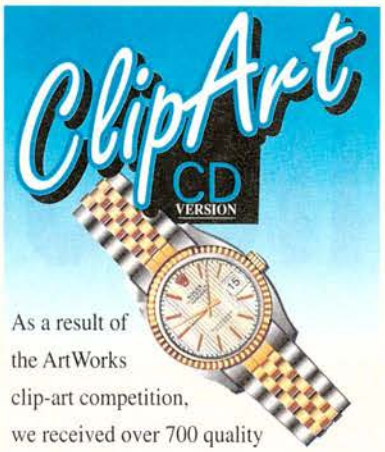
Upgrade to 1.5 from earlier versions
£10.00 + VAT (£11.75 incl.)

RRP for normal 1.5 full package
£169.00 + VAT (£198.57 incl.)
RRP for the CD version of 1.5 (includes everything on the clip-art disc)
£169.00 + VAT (£198.57 incl.)
Upgrade from the floppy disc version to CD version £29.00 + VAT (£34.07 incl.)

To mark the release of ArtWorks version 1.5 we thought we would take the opportunity to remind you of some of ArtWorks most outstanding features:

• Full anti-aliasing of drawings to give superb on screen quality • infinite undo, so no mistake is final • ultra fast screen re-draw • an easy to use toolbox • fast and easy to use graduated colour fills • a blend tool for tweening or morphing • an envelope tool for all sorts of distortions • a perspective tool to rotate in 3 dimensions • a text tool to enter text in any font, any angle any size - and the text remains editable on the page even after graduated fills • text around a curve • a freehand line drawing tool • the ability to break complex drawings into a number of layers • read and write file compatibility with CorelDraw, Illustrator, Freehand and various Acorn formats • ArtWorks files can be dropped straight into Impression and other major Acorn WP/DTP packages • print tiling allows poster sized prints • compatibility with all RISC OS printer drivers (including Computer Concepts 24bit colour drivers) and PostScript printers • zoom in and out • multiple window views of any drawing • interactive object dragging, scaling, rotating • a large collection of sample clip art included free • 220 high quality outline fonts included free.

"In short, it is amazing"
Archive



As a result of the ArtWorks clip-art competition, we received over 700 quality entries - this CD contains the best of them and many more ArtWorks examples (and the ArtWorks Viewer so that non-ArtWorks owners can view them). The illustrations can be used by anyone for incorporation into a growing range of Acorn applications that can take ArtWorks files. The disc also contains dozens of 24-bit high quality photographs (ideal for use with the 24bpp version of Impression and ArtWorks 1.5) and a demonstration version of AudioWorks with example audio files.
RRP £19.00 + VAT (£22.32 incl.)

A full 8 page specification on ArtWorks is available on request.

Computer Concepts Ltd
Gaddesden Place
Hemel Hempstead, Herts HP2 6EX
Tel.: 0442 63933 Fax: 0442 231632
EMAIL: Info@CConcepts.co.uk

GET AN EXTRA DISK free!

Ensure your copy every month

SUBSCRIBE NOW

Acorn Computing is selling faster than cards for Valentines Day. So make sure you get your copy every month – take an annual subscription now and you'll get two disks every month if you have a 32-bit machine.

As a subscriber you will get an extra bonus. Not only will you have the Acorn magazine acclaimed for having the best cover disks of all, but you will receive an exclusive EXTRA FREE disk packed with software for either 32-bit or 8-bit machines.

If you have a 32-bit machine, your special subscriber disks will be brimming with utilities, excellent public domain software, games, demonstrations and much more.

If you have an 8-bit machine, such as the BBC B or Master, your special disk will contain ingenious and new programs written specially for the machines – PLUS your subscription is over 20% less than the 32-bit price.

Quantity and quality – that's got to be a combination you cannot ignore!

MegaDisks for 32-bit users are packed with top programs covering entertainment, utilities, desktop publishing and graphics, programming and education. Recent MegaDisks have included:

- *Imagery worth £90*
- *Zool, Ninja from the Nth Dimension*
- *The Crystal Maze*
- *Lemmings 2, The Tribes*
- *Badger Trails educational adventure*

BEST VALUE FOR YOU!

Subscribers of 32-bit machines get

Subscribing brings you so many advantages. It ensures you get your copy of Acorn Computing without any fuss or effort. As a subscriber you can forget about worrying when the next issue goes on sale because your copy is reserved for you personally. You don't have to set foot out of your door, let alone have to queue up at the newsagents. You'll save yourself time, hassle and some money as well! There is no risk when you subscribe. Not only are you protected against inflation price increases, you can cancel at any time and we will refund the value of all unmailed issues.

Direct Debits make it easy!

We can make it even easier for you when you subscribe quarterly by ongoing direct debit, it's the easy way to pay. You pay only a small amount each quarter and over a year you will receive an extra issue. At any one time you are only committed to three issues at the most, and you can cancel whenever you want.

COMPLETE THE ORDER FORM AND SUBSCRIBE NOW

Which subscription?

	Acorn Computing cover disk + subs disk	Acorn Computing and 40T BBC disk	Acorn Computing and 80T BBC disk
12 Issue Subscription – *UK*	£34.95 ☐ 2675	£26.95 ☐ 2678	£26.95 ☐ 2681
12 Issue Subscription – *EEC*	£49.95 ☐ 2676	£41.95 ☐ 2679	£41.95 ☐ 2682
12 Issue Subscription – *Rest of world*	£64.95 ☐ 2677	£56.95 ☐ 2680	£56.95 ☐ 2683
Quarterly Direct Debit – *UK only* (Complete the form opposite)	£8.73 ☐ 2673	£6.73 ☐ 2674	£6.73 ☐ 2687

Deliver my magazine to

Name: _____

Address: _____

_____

Postcode: _____ Tel No: _____

☐ *Please tick if you do not wish to receive promotional material from other companies*

Please return to: Europress Direct, FREEPOST, Ellesmere Port, L65 3EB

You can also order through our 24 hour hotline:

Phone: 051-357 1275 Fax: 051-357 2813

How to pay

☐ I enclose a Cheque/Eurocheque payable to Europress Enterprise Ltd

☐ Please debit my Credit Card Signed _____

No ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐ Expires ___/___

Quarterly Direct Debit Instruction

☐ AUTHORITY TO YOUR BANK/BUILDING SOCIETY TO PAY DIRECT DEBITS

Name of bank/building society .....

.....

Address .....

.....

.....

Name of account .....

Your account no. ☐☐☐☐☐☐☐☐

Sort code ☐☐ ☐☐ ☐☐

Signature(s) .....

Date .....

FOR OFFICE USE ONLY

Originator's Identification No. 8 5 1 4 1 2

Ref No. .....

Your instructions to the bank/building society:

- I instruct you to pay direct debits from my account at the request of Europress Enterprise Ltd.
- The amounts are variable and may be debited on various dates.
- No acknowledgement required.
- I understand that Europress may change the amounts and dates only after giving me prior notice.
- I will inform the bank/building society in writing if I wish to cancel this instruction.
- I understand that if any direct debit is paid which breaks the terms of the instruction, the bank/ building society will make a refund.

Bank/building society may decline to accept instructions to pay direct debit from some types of accounts.

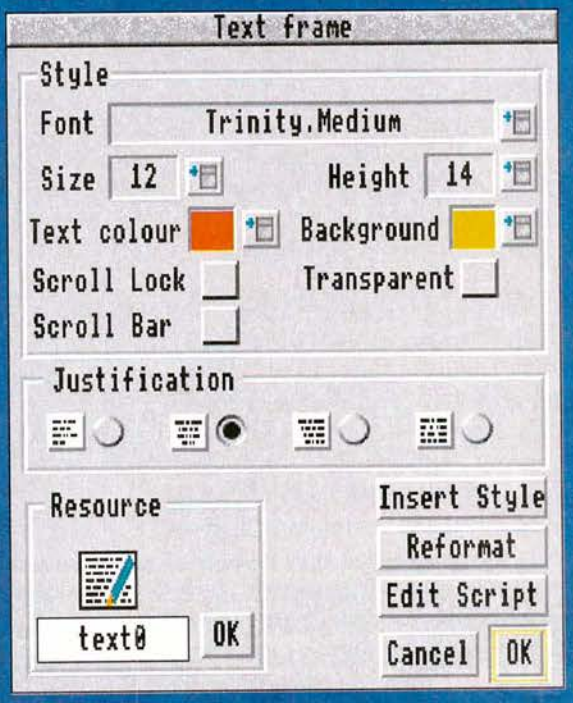
genesis™

the future of multimedia

Genesis, which for many years has been the leading multimedia authoring package on the Archimedes, has taken a large step forwards with the announcement of two new versions: Genesis Project and Genesis Professional. Both new versions include a completely revised user interface designed to be both easy to master for the novice user, yet quick and powerful for the Genesis expert.

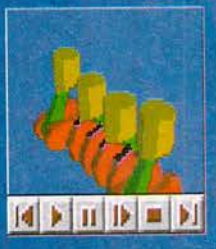
The Genesis menu structure has been simplified by using dialogue boxes to alter the style of frames and pages. Application creation and editing has been eased by the introduction of 'Object Linking and Embedding'. 'OLE' allows data to be transferred quickly and smoothly between Genesis and editors such as Draw, Euclid and Artworks.

Genesis now supports Artworks, Replay, Windows .BMP and .WAV files. Control buttons can be added automatically to Euclid, Film, Replay and Sound frames. It now incorporates a 24 bit colour model and can handle the new 15 and 24 bit Sprites. A turbo loading system significantly increases the speed at which pages open.



genesis Project

Genesis Project is the replacement for Genesis Plus. It is aimed at the user who wishes to create multimedia applications in a simple straightforward manner by clicking and dragging with the mouse. New features include 3D frame borders and automatic frame snap. Users of Genesis and Genesis Plus will appreciate the ease with which applications can now be created and the extra facilities that the new user interface brings.



genesis Professional

Genesis Professional is the replacement for Genesis II. It is ideal for the Genesis power user who requires the very best in multimedia authoring tools. Many features, previously only available via the script language, can be accessed using the mouse. Master pages can now be created and added to a library. Support is provided for Laservision players and for CD (including control for CD audio). The powerful Genesis Script language has been extended with a host of new keywords and now supports global variables which can be accessed by all pages. Scripting can now be done externally in Edit using the OLE facility.

Genesis Project	£50
Genesis Project (Site)	£200
Genesis Professional	£120
Genesis Professional (Site)	£480
Upgrade Genesis/G+ to Genesis Project	£35
Upgrade Genesis/G+ to Genesis Professional	£90
Upgrade Genesis II to Genesis Professional	£60

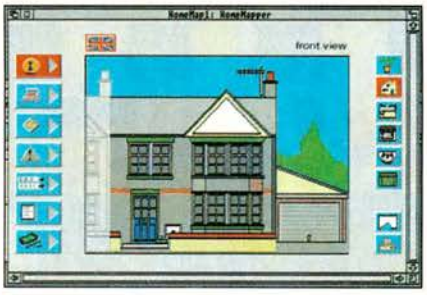
Site licence upgrades X 2 Prices inc. P&P but exc. VAT

genesis™

interactive multimedia authoring

Oak Solutions Ltd Dial House 12 Chapel Street Halton Leeds LS15 7RN
Tel: 0532 326992 Fax: 0532 326993

OAK SOLUTIONS



● *Your home, ready and waiting*

Home is where the heart is

Rog Frost takes part in some home making

HOMEMAPPER looks at different aspects of the homes we live in. The first section of the program lets us roam about the house. We can go to the kitchen, bathroom, lounge, garden and bedroom.

Each location can be viewed normally or as a plan. Once in a location there are several options. You can focus in on tools, materials, services and safety aspects. Each presents a new picture, so in the garden selecting tools takes you to the shed, in the lounge choosing safety shows some rather terrifying fire hazards.

At any point you can call up labels for the picture being viewed and you can add your own labels to it, though these don't appear to be saved by the program. However, there is a print option at all times so alterations made can be printed out. Explanatory text is available at each stage and this can be configured at two levels of difficulty, broadening the age range to which the package applies.

Having looked around the house you can move on to the database. This is based on bedrooms and can be set up so that all members of the class have their own file. The first part is a pictorial representation with doors, windows, desks and various bits of clutter can be placed in the room.

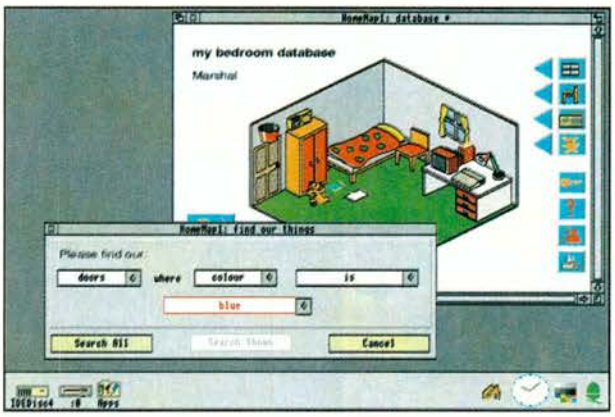
This is fairly straightforward, though there is occasional confusion in the program about just which item you are selecting. Each has a file attached to it so you can detail colour, size, material and function. Having done that you can interrogate the database on these fields for one or all members of the class.

Some of the items in the bedroom have further activities attached to them. You can read a book and use the calculator for simple arithmetic. The lamp leads you to an electricity meter that shows the effects of switching on different devices and the cassette player will play Maestro files or samples and, if you have the Oak Recorder installed, will record anything you like.

The letter writing activity is very nice. You can write a letter and tell Homemapper to post it to other children in the class. When they access their own files they will find the letter awaiting them.

There's no doubt that technically this is a nice piece of software but you will want to think carefully before adding it to your library. The whole thing shoots rather vaguely at various learning targets and in the first section at least, does little that a good quality picture book could not accomplish.

The bedroom database is a nice idea but sets up expectations beyond the software – you can choose from many colours, for instance, of the door to your bedroom, but only two are available in the picture. The database is very limiting and provides no graphs, though data can be exported.



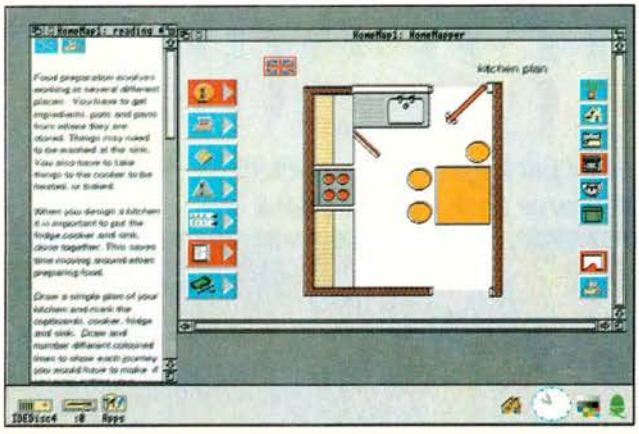
● *A bedroom ready to use and customise*

Summing up

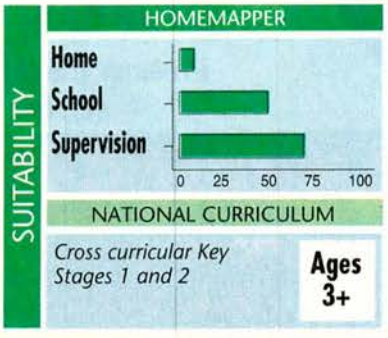
Homemapper perhaps tries to cover too wide an area and fails to address any concept in any depth, though the projected availability of other languages holds promise. Having said that, there's no doubt that it could be used in the classroom as the launching point for a project on homes, but its use would have to be very carefully managed by the teacher.

PRODUCT SPOTLIGHT

Product: Homemapper
Price: £44.95
Supplier: TAG Developments, 19 High Street, Gravesend, Kent DA11 0BA.
Tel: 0474 357350
Requirements: 2Mb ram



● *Information can be read or printed as you explore*



IN POLE POSITION . . .

*Now available on RISC OS Format & Windows 3.1**

£49.95
exc. P&P & VAT

Risc OS, 2Mb Min. Required

CARS - MATHS IN MOTION

- ★ Modelling
- ★ Language
- ★ Science
- ★ Decision Making
- ★ Problem Solving
- ★ Teamwork
- ★ Strategy
- ★ Geography
- ★ Design
- ★ Technology
- ★ Life Skills
- ★ Transport
- ★ Maths
- ★ Art
- ★ DTP
- ★ Control

'CARS' is one of the most popular cross curricular simulations ever produced. It will provide you with an ideal base for an extended topic or an activity week; it's up to you how you use it! The new RISC OS and Windows 3.1* versions have several extra features including one that will allow you to design and race around your own Grand Prix circuit. The possibilities in this one feature alone are almost endless! The new program is accompanied by many resource files that include worksheets, crossword puzzles, word searches, anagrams, pictures, track plans, teacher support material and much, much more!

"Frontier 2000 is a superb pack, the trails are entertaining and informative whether used at home or at school"
– Roger Frost, The Micro User, June 1992

- ★ Hadrian's Wall
- ★ Roman Times
- ★ Mary Queen of Scots
- ★ The Solway Firth
- ★ Bonnie Prince Charlie
- ★ The Civil War
- ★ Victorian Britain
- ★ Railways
- ★ Timeline from 43 A.D. to May 1991
- ★ The Border Reivers
- ★ Map Reading
- ★ Decision Making
- ★ Genealogy
- ★ Poetry and Language
- ★ Music
- ★ Teacher Support Material
- ★ VHS Video Tape
- ★ Border Ballad Cassette
- ★ Full Colour Brochures
- ★ Posters and Postcards
- ★ Piece of Roman Timer
- ★ Tourist Information
- ★ Reivers Car Trail Guide
- ★ Magazines
- ★ Pictorial History Guide

Awarded 1993 Gulbenkien special commendation for most imaginative educational work

ALSO AVAILABLE ON RISC OS CD ROM

FRONTIER 2000

Probably the most complete education package to date ... £49.95 disk based version, CD Rom £79.95, Resource pack £30 exc. P&P & VAT

. . . CAMBRIDGESHIRE SOFTWARE HOUSE

THE COMPUTER CENTRE, 8 BRAMLEY ROAD, ST. IVES, CAMBRIDGESHIRE PE17 4WS
TEL: 0480 467945 FAX: 0480 496442

Taking the plunge

Frank Jukes keeps his feet dry with this sporting simulation

SOFTWARE to support swimming? Well, I suppose I've seen it all now. Swimming comes on eight disks complete with an eight page manual and recommendations from aquatic luminaries such as Adrian Moorhouse.

Using Oak Solutions' Genesis as a shell, an extensive series of simple yet surprisingly effective animations provide clear illustrations of basic swimming strokes and techniques.

Crawl, backstroke, breaststroke and butterfly are all catered for along with gliding and floating. To make the package complete, survival skills are covered and there is a water safety game which can be played by up to four players.

Working, as I too often do, on the basis of *read the manual only if you have to* it was some time before I discovered that the eight page manual had some fairly detailed and vital advice to offer.

By changing to a 256 colour mode such as Mode 15 the swimmers changed from various shades of grey to the more natural pinks and browns of boys and girls.

Following instructions to turn off the cache on my A5000 also improved matters. The animations were slowed down and the swimmers moved less as though Jaws was only a bubble or too behind.

I must admit that having to make alterations at that kind of level isn't much to my liking. I prefer applications to take care of things for themselves and to exit tidily later on.

Setting anti-aliasing to 24 points and cached bitmaps to 48 points is a little over the top in the classroom, especially when the process may well be observed by inventive young minds.

Once set up, however, the animations conveyed the feeling of motion better than I could reasonably have anticipated. They are mainly side-on, full length views of swimmers with some partial views to look more closely at areas such as the movement of legs.

In some situations I felt that a view from above might have been useful as would some illustrations of common problems. Trying to explain a screw kick to an eight year old takes a lot of words and leg waving and is far from easy. An animation would be wonderful as well as being much cheaper than buying a video camera. To emphasise important teaching points, and to help with the review pages dotted along the way, sampled comments are provided in a clear although very quiet voice.

From personal experience, and following advice in the manual, I think it would be a good idea to use headphones in the classroom if nothing is to be missed.

Some of the samples are quite long and detailed. As well as comments and advice they also include some fairly wild cheering and clapping to reinforce correct answers on the quiz pages. A gentle *try again* usually accompanies a wrong choice.

One of my initial doubts concerned the ease with which support provided in the classroom would be remembered and transferred into progress at the pool.

There appeared to be few problems. The images are so simple and uncomplicated that they can easily be brought to mind when the occasion demands.

One aspect of the package which is particularly welcome is the section on water safety. Children learning how to swim are not always taught how to stay safe. The emphasis is too often solely on building a good stroke.

Swimming refers to staying safe in several areas and includes a screen-based counters and board game. Although the game is a little inflexible it nevertheless requires children to think about options for avoiding danger.

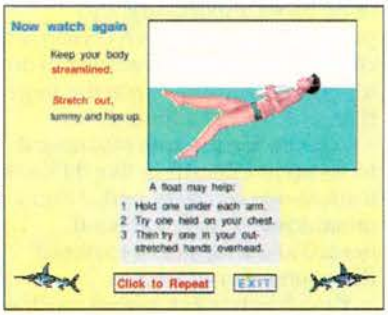
PRODUCT SPOTLIGHT

Product: Swimming
Price: £35.95
Supplier: CD Sports, 4 Wirral Business Centre, Dock Road, Birkenhead, Wirral L4 1JW.
Tel: 051-691 0893

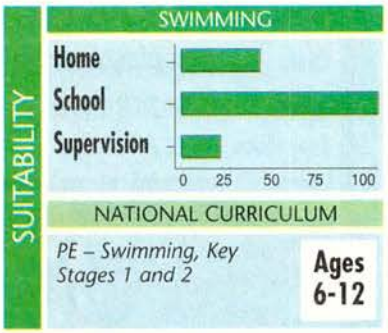
Summing up

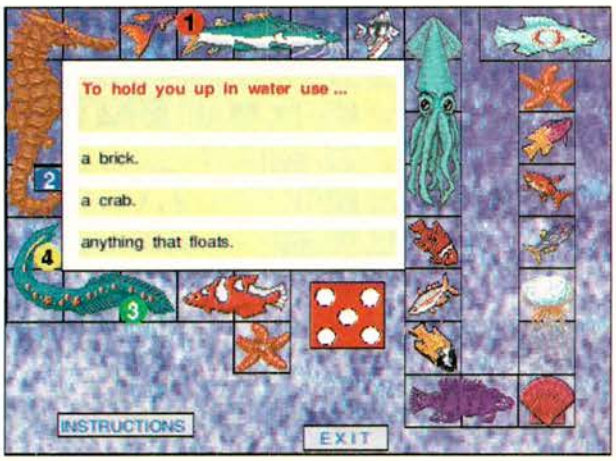
Swimming provided me with a pleasant surprise. It is well thought out and executed and, above all, it works. My class of nine and ten year olds will certainly benefit from it.

● *Good presentation puts the safety message across*



● *Animations give you an idea of what you should be doing*





● *Questions and answers test what's been learnt*

Tuning the ear

Graham Keeling looks at a new way of making music

Graham Keeling is a primary school teacher in Lincolnshire. He has worked extensively with computers for the last 10 years and frequently writes for the educational press.

MUSIC Box is a multi-tasking, creative music-making package for the entire primary age range. Once loaded from the iconbar you are simply presented with four boxes – Sound Box, Chord Box, Tune Box and Beat Box. A mouse then allows you to enter four totally creative musical worlds.

Sound box gives a rectangular grid of 77 squares. Seven instruments, each with 11 notes, can be played simply by moving the mouse over them with select held down. Menu allows a new choice of instruments to be loaded but no more than seven at any one time.

A metronome gives a steady beat which can be altered for speed or turned off completely while a volume control and tape deck complete this screen.

Once instruments have been chosen and a few ideas developed the tape deck allows a *tape* to be made which can be played forwards or backwards, faster or slower. Within this box children can experiment with no hang ups about musical conventions or forms getting in the way. They are free to simply have fun with sounds.

Chord Box has a similar layout of tape deck and metronome but has only five instruments available. Here we can develop harmony. Each of the notes can be turned on by the mouse and then the whole chord heard. To help the children explore more varied chords, semi-tones are available at the side of the normal 11 note stave.

Just listening to the wonderful textures available must be of tremendous educational value for any child not blessed with musical skills. More importantly, this particular box could well convince a child to move from a recorder to an instrument capable of playing more than one note at a time.

You can use just one instrument to set up five chords or five different instruments could be used. Again a metronome is there to help if needed and a tape deck to record the results of your labours.

Tune Box brings together much of the first two sections. We now have seven instruments available, which can be placed in any position, and a grid of 11 notes. These 11 notes are of course the notes of the stave.

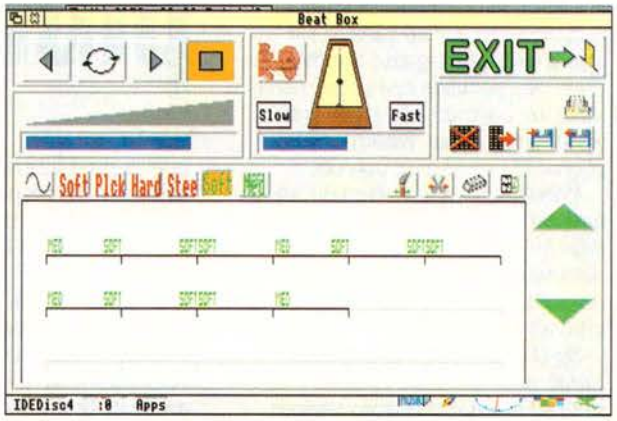
Rhythms, tunes and chords can quickly be developed while whole passages can be copied or deleted. Single columns can be inserted or cut out and the whole tune played through forwards, backwards, looped or saved to disk.

You can also tie notes to produce longer notes within the tune while a little rubber allows any mistakes to be removed easily.

Scissor and paint brush icons allow whole bands of music to be cut or pasted in while a configure option allows the note value to be set and the key signature to be altered. All the normal options outlined above can be switched off if necessary.

Beat Box can be used in two ways: Rhythms can be built up in much the same way as Tune box – placing the sound within a cell on the screen. However, Beat Box has much smaller divisions than Tune Box so more complex rhythms can be explored.

The alternative is to use it as a drum machine, tapping in rhythms directly from the space bar or mouse. More than one sound can be played at the same time so they can be shuffled to allow deletion of specific sounds.

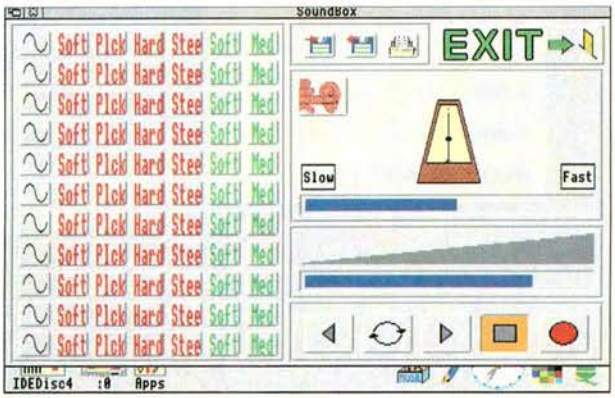


● *Set the beat in the BeatBox*

PRODUCT SPOTLIGHT

Product: Music Box
Price: £35
Supplier: Topologika, PO Box 39, Stilton, Peterborough PE7 3RL.
Tel: 0733 244682

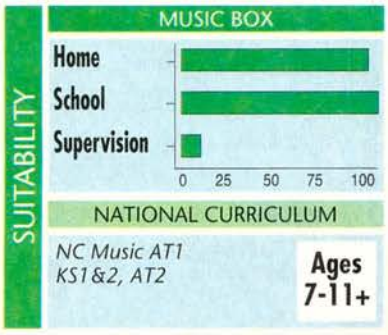
● *Intuitive icons make MusicBox easy to access*



Summing up

This is a very useful addition to the already excellent software available in the area of primary music making. What I find really impressive is the ease of use and true creative nature of working with the software.

You don't manipulate other people's musical ideas, children have to develop their own. Neither are you dependent upon an understanding of musical notation. Music Box is a truly creative package that fills a gap in the market very well indeed.



Investigator III £49.95

The new version of the highly successful Investigator II is a considerably expanded and improved package.

- Now includes not only the most powerful disc backup routines available but also a collection of other useful programmes:-
- A disc recovery package that will fix broken directories, undelete accidentally deleted files and lets you directly edit the disc contents - works with hard drives, floppy drives or other legal filing systems.
- A hard drive backup program that will backup from the hard drive - or other filecore system - to either floppy, syquest, tape streamer or other destination. The package is fully configurable and can backup just the changed files, by date or everything.
- A virus killer and detector that will detect and kill all current viruses. Warns you if an unauthorised attempt is made to access files such as !Boot files and will remove any existing infections for you. Configurable to be active at all times or only scan new discs.

This combination of packages makes Investigator III the best disc utility suite available on the Acorn and makes sure that you won't get caught out by damaged data!

Desktop Tracker £49.95

"...programming at its best" - Acorn User January 1993

Continuing in the tradition of the immensely popular Tracker package, use Desktop Tracker to create fantastic tunes with no extra hardware.

Desktop Tracker has been completely rewritten to incorporate many new and innovative features:

- Up to 16 tracks
- Fast playroutines
- 4 effects per note on each track, allowing up to 64 simultaneously
- Real time effects include pitch bend, arpeggio, volume slide, phasor effects, note retriggering and many more.
- Powerful editing facilities, including transpose, cut and paste, echo and more.
- Score display allows you to see your tunes and samples in traditional stave notation format.
- Public Domain playroutines and jukebox to allow tunes to be played on any machine.

MIDI/Sampler Interface £79.95

A high quality sound sampler and Acorn compatible MIDI interface.

- Fits into the normally unused Econet socket - it does not waste an expansion slot.
- Max. sample rate 50Khz.
- Perfect for educational use - can sample from a wide variety of inputs - CD, HiFi, Radio, Microphone etc.
- All cables and software supplied.
- User friendly Pulse sampling software provided.

Printer Port Sampler £39.95

Compatible with all Acorn machines - plugs into the Parallel Printer Port.

"Pulse" software provided includes the following editing features - fade in/fade out, over and under sampling, zoom in/zoom out, save and edit marked section, play forward or backwards at normal or high speed.

Save in various file formats - Armadeus, Tracker, Sound Module.

QD Bug £69.00

"....a must for assembler programmers, and comes very highly recommended" Archimedes World May '93. (overall rating 95%).

QD Bug is the definitive debugger for all ARM coders both beginner and expert. It has many powerful features including: single stepping, skip and force instructions, SWI history lists and trapping, customised flexible windowing system, view BASIC sources and text files from within the program, keypress emulation with macro record and playback.

Please contact us for further details on QD Bug.

IDE & SCSI Solutions

We are one of the largest suppliers of Acorn extra drives and supply a range of drives - the sizes below are just a selection. If you require other sizes (either larger capacity or 2.5" drives suitable for the A3020) please contact us.

A5000 / A4000 IDE Systems

These drives can either be installed alongside your existing drive or as a replacement for it. All drives are supplied with the necessary cables and fitting instructions. Drives supplied are high quality Conner or Quantum drives.

170Mb £189
250Mb £289

Call us for latest prices - they could be lower!

SCSI Systems

All systems are CDFS and Acorn compatible. Cards are available in full size 16-bit format for the A5000/540/400/300 series or the smaller size for the A3000/3010/3020/4000 series. All the cards are very fast - top transfer speeds in excess of 2.8Mb per second - contact us for exact details of performance and specification if required.

170Mb including card and all cables £289
240Mb including card and all cables £389

For use with A3000/3010/3020/4000 series add £75 for an external box for the drive.

CONTACT US FOR DETAILS OF OUR NEW LOW COST CD-ROM DRIVE

Please add £9.00 delivery for hard drives and £2.00 for all other products.

All prices exclude VAT

the range

for more info. and orders contact:-
VERTICAL TWIST
Albany House
Oving Road, Chichester
West Sussex PO19 4BH

Tel: (0243) 531194
Fax: (0243) 531196

Products designed & developed by:

Vertical Twist

Learning to read is fun

Listening, reading and painting. Pat Janes investigates

THE Spoken Word is a program where you can just click and explore and was an instant favourite with pre- and early readers. The multi-tasking package uses the Acorn 32-bit machine to produce sound samples of a library of words and colours to complete a picture and compose short phrases.

A picture appears alongside the list of words relating to it. Underneath is an artist's palette. Click on this and the clearly spoken sampled colours ring out.

Two other icons provide options to add your own words to the picture or a rubber which allows the last change, text or colour, to be undone – again the voice tells you what is going on. Simple. When you have selected a colour with the mouse, its name is spoken – for instance dark green – you then click over the item you have chosen in the list – for example grass – and the word is spoken.

The relevant part of the picture is coloured and the phrase, *dark green grass* is spoken. When the picture is coloured to your satisfaction you may save it as a sprite file.

It is necessary to use a 256 colour mode when running this program – Mode 15 or 28 for instance. The Spoken Word will run in other modes although the word does not exactly match the visible colour.

However, as this is a multi-tasking program, Acorn guidelines request that other applications mustn't be affected. So if you want the true colour you'll have to change mode manually.

By installing Paint or Draw your picture can be dropped into either or both applications and edited with the usual facilities. You could opt for putting it into a DTP package or just print it.

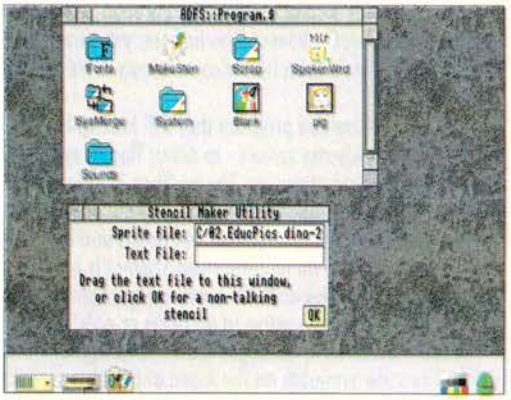
I spent a most enjoyable time working through this program. The pre-school children being taught colours certainly found it a very good way to reinforce their lessons.

However, the ability to add your own pictures, words and themes extends the life and versatility of the program. So much so that the Spoken Word would be useful for any age of person learning to read.

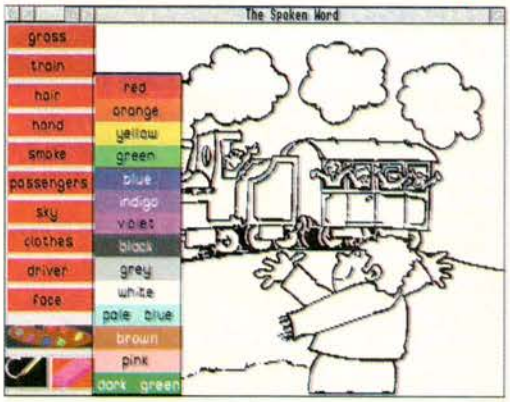
I would have welcomed such a program when I was teaching EFL students, whose mother tongue was not English. I can also see this program being valuable for children whose parents communicate by sign language, as this would enable them to hear the colours and items spoken.

PRODUCT SPOTLIGHT

Product: The Spoken Word
Price: £22 (inc VAT)
Supplier: Wydffa Software, 3 Preswylfa, Llanberis, Gwynedd LL55 4LF.
Tel: 0286 870101
Requirements: 2Mb ram



● *Creating your own is easy once you know how*



● *The colours vary in hue and concept*

Summing up

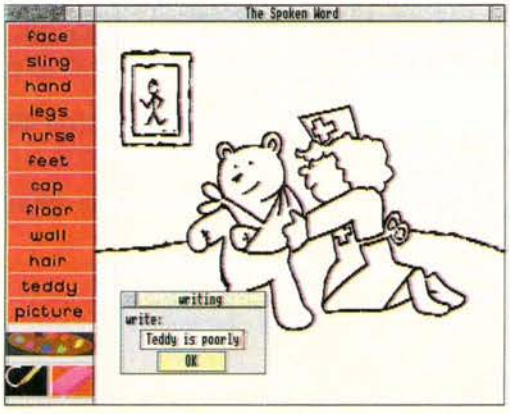
This is not a program which can be unsupervised, although it is possible to choose the Fixed Window option which will prevent a child from closing or adjusting the window and will disable the function keys. But as the iconbar is still visible the child operating the machine can access the hard disk and any other application or facility.

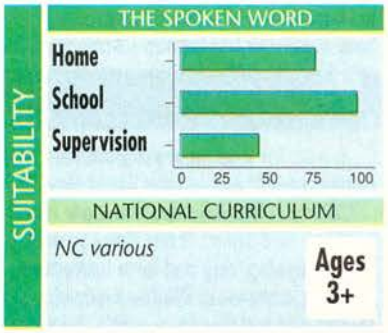
The manual is quite detailed and easy to follow. For the more adventurous you are also taken through how to produce your own stencils, words and sounds.

Don't be put off by sound sampling. Packages such as the Oak Recorder are very cost effective and open a whole new avenue to explore. Also, if you object to someone else's regional pronunciations here is where you can change them.

Perhaps teachers and parents who master adding Spoken Word files could make their creations available to the more cautious users?

● *Words and phrases are clearly spoken*





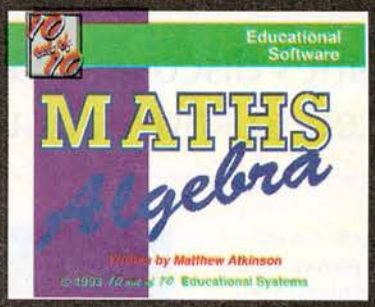
● *Add you own captions and print out the results*

The Fourth Dimension

THE 32-bit Acorn Games SPECIALISTS

The following software is compatible with all Acorn 32-bit computers and standard monitors / TVs

Stunt Racer 2000 – £34.95



10 Out Of 10 Range – £25.95 Telephone for Details

Haunted House – £25.95

Birds Of War – £34.95

Demons Lair – £25.95

SPECIAL OFFER

For every 2 products which you buy direct from this advertisement, you can *DEDUCT £10* from the total cost.

HOW TO ORDER:

Simply send us a quick letter or give us a ring telling us the software you would like, your computers memory *(i.e. number of Mb)*, your name and address and payment via cheque, postal order or Access / Visa card details. Prices include VAT. Postage and Packing is FREE in the UK. Overseas add £3 per product.

The Dungeon – £34.95 Requires 2 or more megabytes

Virtual Golf – £34.95 Requires 2 or more Megabytes

Saloon Cars DELUXE – £34.95 Upgrade for £17.50

FREE

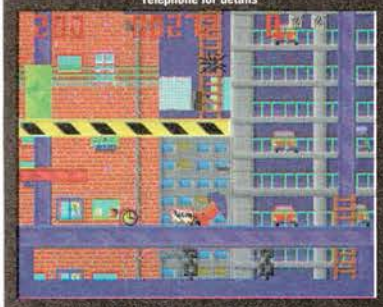
COLOUR CATALOGUE

FOR FULL DETAILS OF THESE GAMES, OUR FULL '10 OUT OF 10' EDUCATIONAL RANGE AND OTHER OFFERS – RING NOW FOR OUR *New* 16 PAGE FULL COLOUR CATALOGUE

-∞- IT'S FREE OF CHARGE -∞-

The Real McCoy Vol 2, 3 & 4 – £34.95
Telephone for details

Carnage Inc. – £25.95



Sylvia Layne – £25.95

SPECIALIST Acorn Software for all 32-bit RISC Machines

The Fourth Dimension, 1 Percy Street, Sheffield S3 8AU.
Telephone: (0742) 769950 or 700661.

Black Angel – £34.95

Enter The Realm – £25.95

Pandora's Box – £25.95

Chocks Away Compendium – £34.95

Break 147 & Superpool – £34.95

Pets with a difference

Pat Janes discovers all you wanted to know about dinosaurs

DINOSAURS are perennial favourites with schools and Spielberg has done nothing to detract from their popularity with either teachers or pupils. 10/10 Software have added Dinosaurs to their series of programs, aimed at both school and home use.

I've always found the children more knowledgeable about dinosaurs than I am and the way the names trip off the tongues of my 11 year olds never ceases to amaze me. But what makes this package different, if anything?

PRODUCT SPOTLIGHT

Product: Dinosaurs
Price: £25.95
Supplier: 10/10 Software, 1 Percy Street, Sheffield S3 8AU.
Tel: 0742 780370

The format is very similar to 10/10 Maths, English and so on. The program is mouse-based and the package contains the basic loading instructions and two guides, one for the player and the other for the teacher or parent.

The main menu asks for your name and you are then entered in the Player Information which will show you your achievement record. As more than one person can play, each name and achievement is recorded.

As you play through the six grades – and are successful – you'll change the colours in the Achievement Chart. Success is proven by the right to print out your own certificate. You are able to set a timer if you wish but I suggest you do this only when you have played the games and know what to expect.

There are six games each of which has six grades and once you have succeeded in changing the colour you are moved on to the next grade.

These games cover all you could possibly want to know about dinosaurs. Making brief excursions into classification, mobility and anatomy allows you to find their correct names and spellings, their vital statistics and preferred foods.

You can play the games in any order and set the difficulty level according to your knowledge. First comes T.Rex where you select between carnivores and herbivores while in Tracker you are given a clue and you need to select which animal fits.

Next comes Raptor and here you have to give the answer or find the missing item. This may sound easy but the answers and items move round the screen so you need to be quick.

Spare Ribs is a quiz game and Missing Link is a game of matching. Finally Lost Island is a fast-action driving game – by steering your jeep you select the correct answer to the question at the foot of the screen.

In each game you can achieve higher scores by decreasing the length of time you allow yourself or by increasing the speed, either of which means you must move more quickly.

● *The now familiar layout of the 10/10 range*

Summing up

This program would be a great addition to the school's library of software and would prove to be a valuable asset to the learning disk box at home. There might be an argument that it should be in the Games box.

Personally, I'd need to raid the library or buy myself a good but easy to follow book on the subject. I would use this program across most of the age ranges. Five to seven year olds could manage some of the work particularly if there were posters of the various dinosaurs on the walls of the classroom.

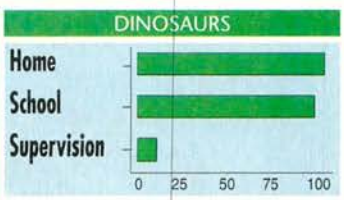
I suspect that some of the older Secondary/High School students would look affronted at being given this work to do but, like me, they would have to revise their ideas, admit to lack of knowledge and then determine to learn more about the subject.

It would not take long for them to get hooked. The incentive to do better than last time is part of the appeal this has for me.

● *I hope you've been paying attention*

SUITABILITY

DINOSAURS



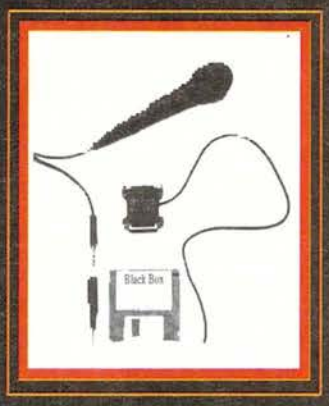
NATIONAL CURRICULUM

NC various

Ages 5+

● *I don't think I'd like to pick on a dinosaur larger than I*

Black Box



Sound Sampler

Is:

Very easy to use.
Extremely easy to install.
Works on any Archimedes computer.

Features include:

Record sound, voice, music, and special effects.
Save as Armadeus files or RM modules.
Play, clear, cut, paste, and copy samples.
Record direct from other sound sources.

Costs:

Black Box with hand-held microphone	£39.95
Black Box with headphones and boom microphone	£49.95
Black Box with de luxe headphones and boom microphone	£69.95
Direct recording level adjuster	£16.95
6 metre extension cable	£6.95

Prices INCLUDE delivery and VAT

Sounds too good to miss

Education prices are available for all the above products
Please telephone for latest prices Official orders accepted
Telephone 0274 618774 Fax Number 0274 619482
Focus IT 4 Gordon Terrace, Idle, Bradford, BD10 8LS

NODDY'S™ BIG ADVENTURE

Noddy's Big Adventure is the sequel to the highly successful Noddy's Playtime. It takes children to the North West corner of Toyland and includes 13 different programs to educate and entertain children for hours on end.

This graded creativity and entertainment package is specifically designed for 3-7 year olds and relates to the early requirements of the National Curriculum.

Drive with Noddy in his car, pick up passengers along the way and visit many exciting locations.

- Kitchen Fun - sequencing, colour and shape matching and vocabulary
- Noddy's Scales - number matching through to addition
- Tricky Trees - memory, sequencing and the language of colour and shape
- Can you Find me? - shape and colour recognition
- Bert's Scrapbook - sequencing and reading skills
- Beach Sorter - sorting
- Picnic Attack - water fun game

Junior Word Processor - this excellent utility develops story telling skills. Its scope is outstanding and features many facilities found in 'grown up' word processors. There is also a word game in each level to create an element of fun.

Available for: Amiga, Acorn Archimedes, PC and PC Windows.

NODDY'S™ PLAYTIME

Noddy's Playtime added a new perspective to educational games, the outstanding value from this extensive package has set new standards of parental expectation in this important area of software based on learning with fun.

Drive around Toy Town, explore exciting locations and learning programs and a full Junior Art Package packed full of creative fun. Designed for 3-7 year olds.

Available for: Amiga, Acorn Archimedes, PC and ST.

PLAYTIME & BIG ADVENTURE TWICE THE LEARNING EXPERIENCE

THE JUMPING BEAN CO.
Leen Gate Lenton Nottingham NG7 2LX
Tel: 0602 792838 Fax: 0602 780963

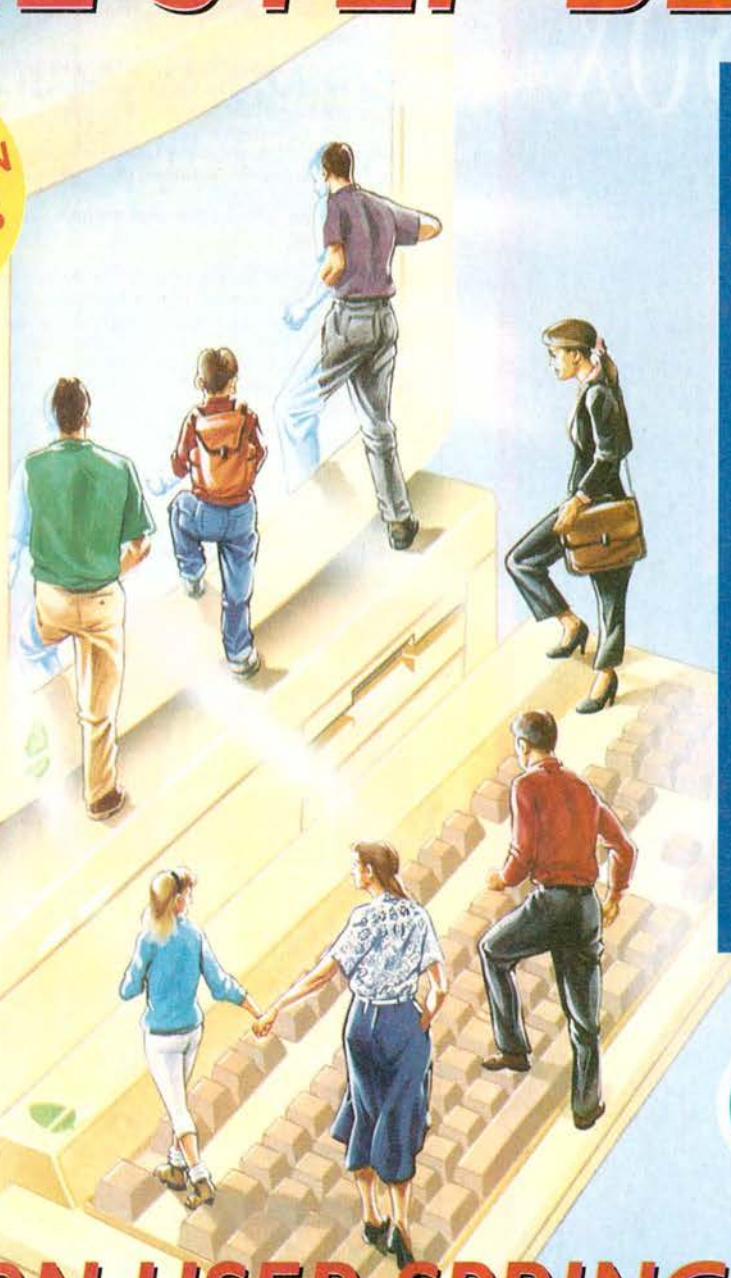
Available from: Boots, Currys, Dixons, Escom, Future Zone, Game Ltd, John Lewis, John Menzies, PC World, Rymans, Tandy, The Computer Store, Virgin and many specialist outlets.

Original Text and Images © Darrell Waters Ltd 1948/68. Text and Images of BBC Television Series © BBC Enterprises Ltd 1992. Licensed by BBC Enterprises Ltd. NODDY is a trademark of Darrell Waters Ltd and is used under Licence.
ENID BLYTON (signature logotype) is a trademark of Darrell Waters Ltd and is used under licence.

WALK THROUGH THE SCREEN AND TAKE

ONE STEP BEYOND

LEISURE
EDUCATION
BUSINESS



Take a look inside our vast computer and see how it crackles with life, bursting with boundless knowledge, ready to enthral and excite ACORN COMPUTER users both old and new.

See, try and buy the latest hardware and software on offer from over 60 exhibitors with many new products on show for the first time.

PLUS

- FREE THEATRE
- FREE SHOW GUIDE
- SCHOOLS PROJECTS
- CELEBRITY VISITS
- ENJOY THE HUMAN COMPUTER GAME
- SURPRISE FEATURES

ACORNUSER
Spring Show 94

ACORN USER SPRING SHOW '94

HARROGATE INTERNATIONAL CENTRE - 22nd to 24th APRIL 1994

For Best Value Order Your Advance Tickets NOW

ADVANCE TICKET APPLICATION

ADULT TICKETS £4.00 (£5.00 at Door)
UNDER 16 TICKETS £2.00 (£2.50 at Door)
FAMILY TICKETS £10.00 (£13.00 at Door)
Opening Times : 10am - 5pm Daily

Please send this application form to
SAFESELL EXHIBITIONS LTD, MARKET HOUSE,
CROSS ROAD, TADWORTH, SURREY,
KT20 5SR.

VISA & MASTERCARD HOLDERS CAN PHONE
0737 814713 FOR TICKET ORDERS

Please rush me :

Adult Under 16 Family Tickets

I enclose a cheque / postal order for £ made out to SAFESELL EXHIBITIONS LTD or please debit my Mastercard or Visa Card no.

Expiry Date

Signature

NAME

ADDRESS

POSTCODE

The sum of its partz

Bruce Goatly evaluates Colton's integrated package

COLTON Software are best known for developing Pipedream, a multi-purpose spreadsheet/word processor/database/charting package. The problem with it – and I speak as an inveterate user – is that it's somewhat quirky and has to compromise across its facilities.

But now Colton have come up with a set of separate applications to cover different functions with the intention of tying them together later on. Thus, Wordz, the word processor, appeared some time ago – reviewed in Acorn Computing in July 1993 – and a while later the spreadsheet, Resultz, was produced and was reviewed in the December 1993 issue.

Now we have the connection between the two with the arrival of Fireworkz. This gives the flexibility of a word processor to create and alter text and apply styles, as well as the data manipulation power of a spreadsheet. Its achievement over even the later versions of Pipedream are shown in that it can be used just as a word processor or a spreadsheet – there's no element of having to strike a balance between them.

But you're not restricted to using the two components separately – in Fireworkz they are integrated into one application. It's possible to import a complete spreadsheet into a wysiwyg word processed document as a table, complete with live, editable data, formulae and charts.

You can also include fully editable text and illustrations within a spreadsheet and apply varying word processing facilities to them. A more extreme example appears alongside, showing how letters or reports can contain live figures from a separate spreadsheet file and be used in a mail merge, with personal data taken from a third file.

If you already have Pipedream, Wordz or Resultz, Colton offer an upgrade to Fireworkz at a discount. If you have both Wordz and Resultz, the upgrade – and it is an upgrade after all – is free. While on the subject of upgrades, Fireworkz handles the conversion of Pipedream files with ease, though a small amount of manipulation may be needed afterwards to make them run faster.

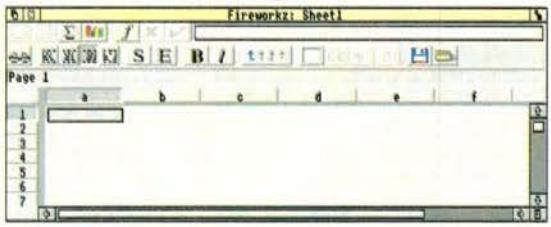
The tutorial files supplied on disk give abundant illustrations of how to do calculations using the application's built-in functions, and one example provides a most ingeniously devised minesweeper game – I'm still trying to work out how it was done.

The Fireworkz box shows its ancestry in what it contains – two disks and a Wordz manual, two Resultz manuals and one Fireworkz manual. In fact this is my main criticism, because although Fireworkz is promoted as an ➤

PRODUCT SPOTLIGHT

Product: Fireworkz
Price: £169
Supplier: Colton Software, 2 Signet Court, Swanns Road, Cambridge CB5 8LA.
Tel: 0223 311881
Requirements: 2Mb ram

● *Starting Fireworkz in letter format...*



● *...and as a spreadsheet*

Wordz and Resultz – a quick look

One component of the package, Wordz, is a complete word processor in its own right, with spell checking, search and replace, word counting and full editing functions. It also has the ability to import sprites and drawfiles as illustrations.

Tabulation control is extensive and tables can extend width-ways over more than one page. Styles and effects allow easy control over the appearance of text and mail merging is supported. The whole is rounded off with a wide variety of printing options.

Resultz resembles – but surpasses – the spreadsheet parts of its predecessor, Pipedream, and is a page-based spreadsheet. This means that the on-screen display shows how the spreadsheet falls on the page making it unique on any computer. The software makes an intelligent guess at a cell's data type as you enter it, but a wrong guess is easily corrected.

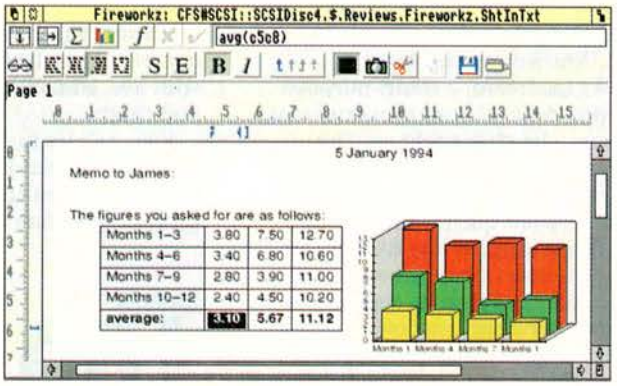
The 189 built-in functions are quickly called up from the button bar and filling them in is so easy that even I – who never cottoned on to functions in Pipedream – found myself using them. The interface is, scarcely surprisingly, similar to Wordz's, including the buttons for styles and effects which can be used on letters or words rather than on whole cells.

The charting facilities allow you to plot graphs of your data in many different ways – bars, pies and scatters – and once plotted the graphs remain live, meaning that if you change the data the graphs change too.

integrated system its documentation gives it a fragmented feel.

The Fireworkz user guide introduces the broad outlines of the package and points out places where the other guides have been superceded, but you still have to read those outdated earlier volumes for details on the word processing and spreadsheeting sides. A more unified approach would be preferable.

My other niggle is about the charting, which although powerful and flexible has no means of adjusting the size of charts other than by eye. This is surely inadequate if several diagrams are to be presented together – some means of scaling them is needed.



● *Text documents can contain spreadsheets and live charts*

Summing up

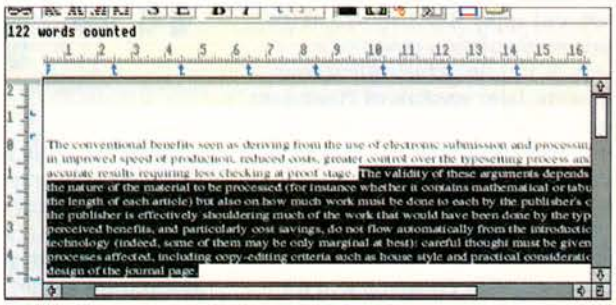
Fireworkz is one of those packages that is difficult to treat in isolation. It simply begs for comparison with Pipedream, though to limit it in that way is possibly unfair. Be that as it may, it has all of Pipedream's strengths without its obvious weaknesses.

Is it worth upgrading from Pipedream? If you'd like to use more of Pipedream's facilities but have been deterred because it seems complicated, then it's worth taking the plunge. If you only use a little of what it can do and are happy with that, then probably not.

I've already converted my Pipedream files to Fireworkz format, which I think says more about the software than me. I certainly find it much easier to visualise what's going on in Fireworkz.

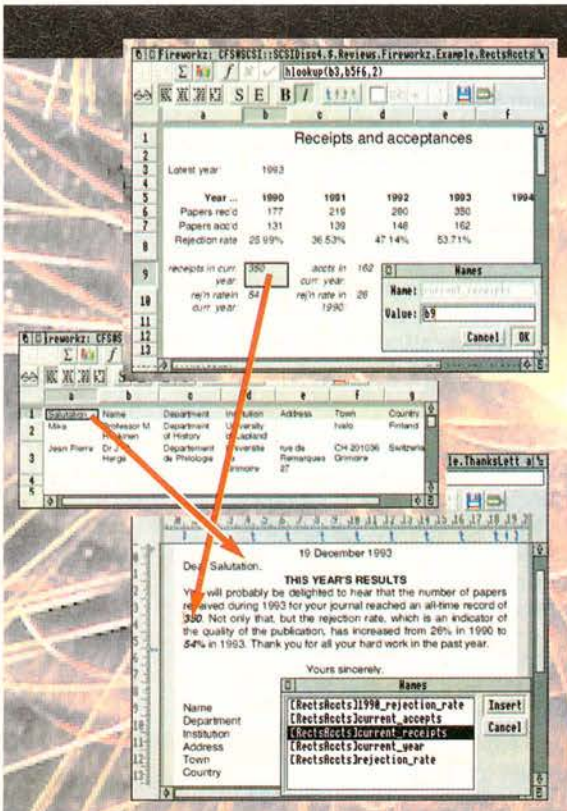
Looking ahead, once Recordz – the database part of the Z series – is available, that too will be able to be incorporated into the Fireworkz expansion strategy. That should further widen its appeal.

So is Fireworkz more than just the sum of its parts? In my view, yes it is.



● *Counting words in selected text – very useful*

Live data in reports



● *How to include data from a spreadsheet and an address file into a mail-merged letter*

Let's invent a fairly simple example, a letter to some people connected with a journal telling them about some statistics from the previous year. The data comes from a file called RectsAccts, shown in the top figure.

The first piece of data is called Latest year and this is all that has to be changed to summon up the appropriate data from the table below. The work is done in italic type in the rows below the table, mainly with the HLOOKUP function which uses the Latest year value to pick out the appropriate column of figures. Incidentally, if I hadn't wanted the calculations to be visible I could have made the text white rather than italic.

The next step is to give names to the cells that you want to link across to the letter because only names, not cell references, can be inserted into a separate text file in this way. The five names shown in the bottom figure are the ones used, and that completes the work on the basic data.

The names and addresses are simply held in a spreadsheet containing the various fields in appropriate cells. A CSV file would do just as well.

The first row holds the column titles and will show as the field names in the merge letter. The letter contains a live date which is updated every time the file is opened – a useful feature. Next comes a salutation line with the first inserted field from the address file, and then the text of the letter.

Cell names from a separate spreadsheet are automatically available as long as it is loaded, and once inserted they contain a reference to the spreadsheet file so the documents become linked. Once the spreadsheet of receipts and acceptances has been filled in, any change to the Latest year figure will insert the appropriate numbers in the letter.

The address fields are similarly defined by reference to the address file, which is also linked to the letter file. The names and addresses themselves are filled in from the rows in the address file as the letters are printed.

This arrangement is in fact far less complicated than it sounds, and is very powerful. Lastly, notice that individual cells in a spreadsheet can have different text styles – these are easily defined with the buttons on the button bar – and so can the values inserted into the text of the letter. This is a distinct improvement on Pipedream.

Simon the sorcerer

the magical, graphical adventure game for the Archimedes

"The most accomplished adventure of its type"
THE ONE

"The animation has to be seen to be believed"
CU AMIGA

HD **HARD DISC INSTALLABLE (optional)**

RISC OS III **MINIMUM 1 MB RAM REQUIRED**

PRICE £39.99 INC. VAT

adventure soft

Available from all good Acorn software stockists or from GamesWare, Unit 26, The Bartletts, Hamble, Hants SO3 5RD. Orderline 0635 299676. Visa and Access accepted.

GamesWare is a trading name of Astrom Computing Ltd.

ECLIPSE

For further information on GamesWare products, please fill in this coupon and post to the address above:

Name _____ Address _____

_____ Post code _____

GAMESWARE

Paying

Andrea Cook makes the computer bear the brunt of the pay day blues

AT TIMES it is hard trying to justify to PC-owning colleagues why I stay with the Acorn for business as well as education and DTP purposes. I can mention the superb usability or the way my non-computer literate staff can access programs, but they look knowingly and point out my traditional paper-based accounts system.

Computerised accounting up to now has left me cold. The idea of transferring everything on to a computer is something I keep putting off to the next financial year. However, the task of calculating wages can be extremely time consuming and confusing and when Payroll Manager arrived I happily delegated.

Even a business with a mere three or four employees can result in a good hour or so of calculating and recording – and errors. This is why it was such a relief to find a program both simple to use and adequate for my company's present and future needs.

I use a standard 2Mb A4000 with 80Mb hard disk and an elderly A310 and RISC OS 2, but Payroll Manager will happily work from floppies storing information for 48 employees on one 800k disk. The only limit is your disk space. For collectors of trivia, according to Silicon Vision, I could fit up to 4800 entries on my 80Mb hard disk.

Payroll Manager is the answer to the prayers of any non-accountant faced with wage calculation. The manual is easy to read and understand and it takes a matter of minutes to get the package up and running. All operations are simple to use and the program is almost self explanatory.

Once details of employees have been entered, all that needs to be done each pay day is input the gross amount earned – and this can be divided to show overtime and the like – along with the employee's current tax code and the pay date.

Everything is then instantly calculated for you, including all *to date* totals. Monthly or weekly wages are equally quick and easy to deal with.

Payslips can be printed out, as can a list of all employees wage details with descriptions of cash requirements to make up pay packets, individual P11s and virtually any other proforma the Inland Revenue ask for.

With over 20 full-time employees now on the payroll, it has made calculating monthly wages a two hour job instead of virtually a whole day's task.

The program can be installed on your hard disk which makes it fairly quick to run. At the end of each section, users are advised to use the *tidy up* routine, however, this takes a surprising amount of time as it goes through every period for every employee.

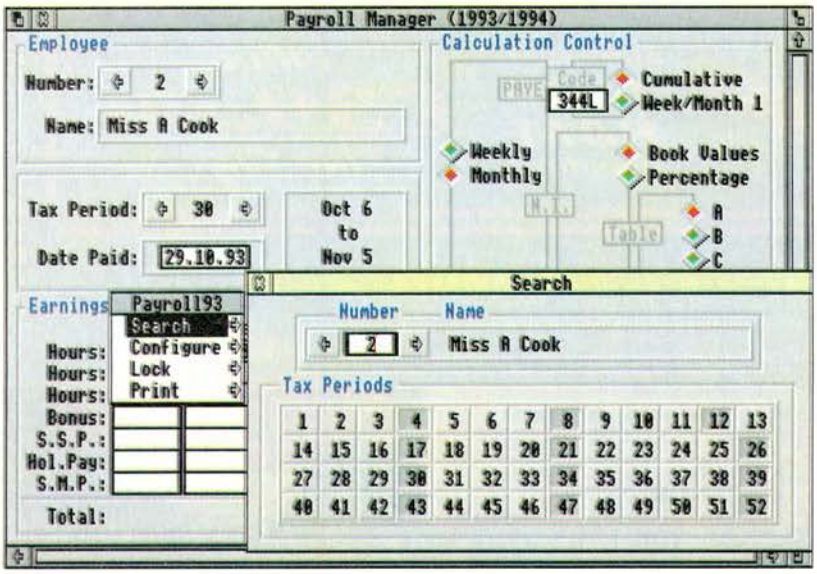
Any change in Tax or National Insurance legislation and rates will obviously render the program obsolete, but all buyers are sent updated versions as necessary.

The employees' details section contains all relevant details: Name, address, date of birth, telephone number, date employment commenced and finished, National Insurance number and so on. Obviously the keeping of such information does necessitate registering under the Data Protection Act but it's a small price to pay for the time saved.

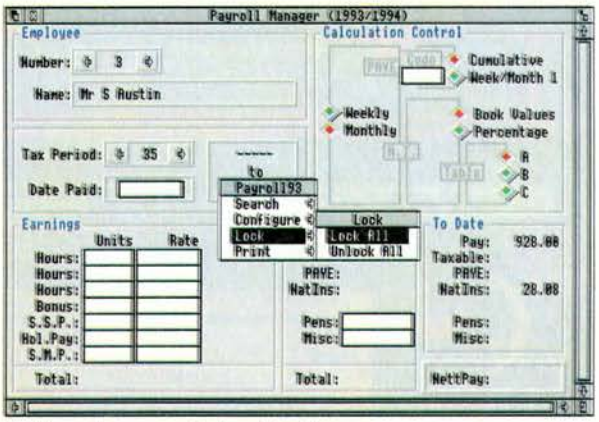
Employees cannot be called up by simply typing in their

PRODUCT SPOTLIGHT

PRODUCT: Payroll Manager
Price: £99.95 inc vat (annual update fee 25% of RRP ie £25)
Supplier: Silicon Vision, Signal House, Lyon Road, Harrow, Middlesex HA1 2AG.
Tel: 081-422 3556



● *Searching via employee number and time period*



● *Though you can lock entries there is no password protection*

number, it is necessary to scroll through the entire list of employees. However, through the search sub-menu options you can access a pop-up menu and dialogue box where you can call up any employee by number and/or period.

Standard set–up options are required as new employees are added but these are very versatile and can be adjusted to suit individual businesses - they mainly deal with frequency of pay and N.I. tables used. How to do this is explained in the manual and is very straightforward.

All information contained on a new employee's P45 is transferred into the employee details section and automatically included in calculations. When I first used the program it uncovered a mistake I had made using the lower rate tables in several of my employees taxation.

However, as they were all *new* employees the program adjusted their tax accordingly and got everything sorted out and up to date for me. This showed differences in amounts of tax due when compared to those I had calculated manually.

At first I assumed, naturally, that I had been correct in my calculations and it had to be the program that was wrong. But after a phone call to the publishers, who were amazingly helpful and friendly, it transpired that I was to blame. Rather embarrassing but very useful.

I spoke to the Technical Manager on several occasions and he was extremely obliging and patient, even when I contacted him three times in one day over the same point.

its way

On each payslip displayed on screen there is room for several varying rates of pay. It is possible to input both a basic total salary and periodic rates of pay. Holiday pay is also provided for as are bonuses. All the other facets of National Insurance are included such as Statutory Sick and Maternity pay and allowances, although it is necessary to refer to your printed tables for the rates.

Directors renumerations are also dealt with as are commission payments, royalties and sub-contractors payments. A nice point is that an employee can have an earning configuration file avoiding repeated data entry for each period.

There is a space for pension deductions and other after tax deductions such as employer loans or earnings attachment orders. Most potential problem areas can be overcome by checking the manual, for instance for tax rebates from a previous tax year.

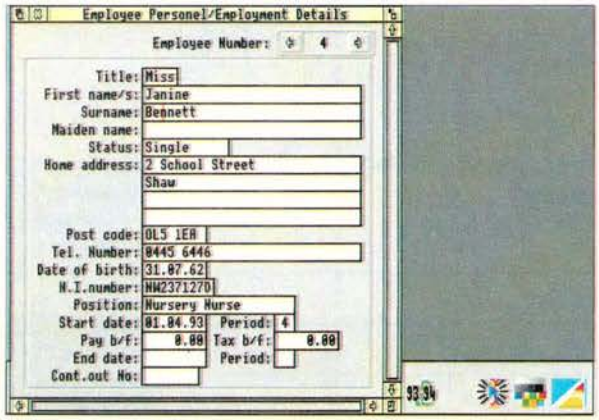
Employees are called up in turn to have the current periods wages put in. Any who have a start date after, or a finish date before, the pay date are omitted. Any employees on emergency tax code are shown as month one basis and, when a permanent tax code is notified, all deductions are amended accordingly.

Printing

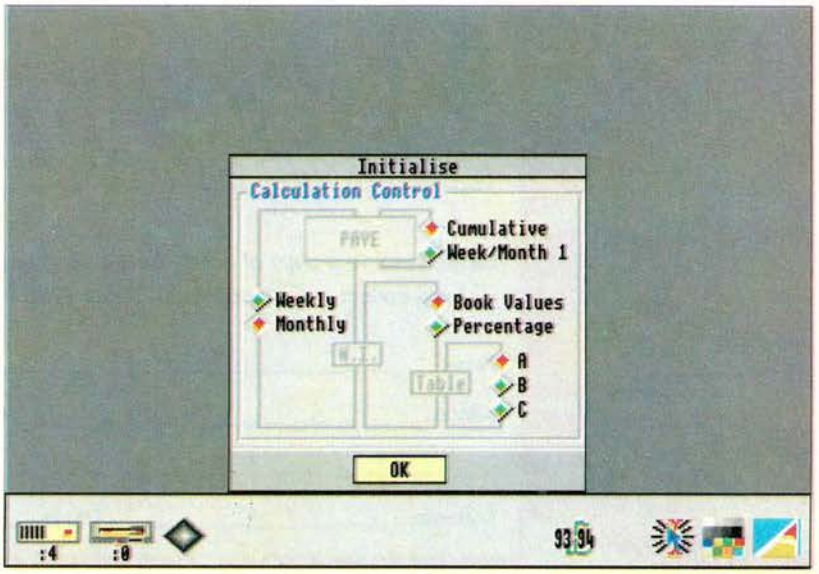
A major drawback of this package came to light when the time came to print out the pay slips - Payroll Manager does not use the Acorn standard printer drivers. Now this is where I show my ignorance of other payroll packages which, so I'm told, make money by forcing you to buy their particular type of stationery.

Because I use Acorn machines I'm used to creating my own stationery so I assumed that the payroll software would create its own forms as and when needed – but it doesn't. You buy standard stationery or print out your own using supplied drawfiles then print ➤

Andrea Cook is the Officer in Charge of a private day nursery in Tameside with over 30 permanent and part-time staff.



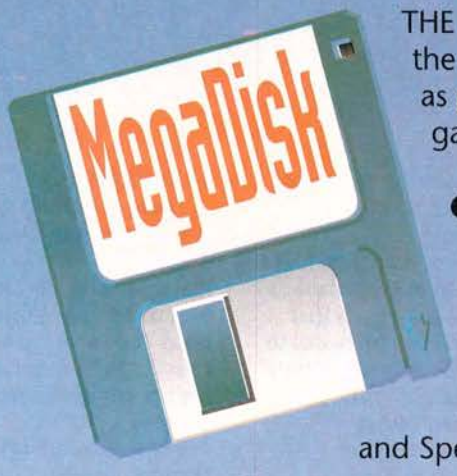
● *Adding or amending details saves them straight into the main program*



● *With a new employee you decide which calculations are needed*

NEXT MONTH

WHAT'S COMING IN THE NEXT ISSUE OF *ACORN COMPUTING*



THE March issue of *Acorn Computing* will be in the shops on 7 March and the MegaDisk will be as packed full of exciting quality applications, games and utilities as we can make it.

- **SIMON THE SORCERER** – the long-awaited adventure game should be making its appearance in an exclusive demonstration form.
- **SPOKEN WORD** – Wyddfa's early reading program for Key Stage 1 and Special Needs
- Plus much much more, including:
- The programs from the magazine and the best Public Domain utilities around

Reading between the lines

We look at the tantalising world of OCR – Optical Character Recognition – and compare the packages that are currently available. Do they work and what would you use them for?

Regulars

In addition to the best informed views, comprehensive coverage of new education products and the latest in art and music products, next month's *Acorn Computing* includes:

- Problem Solved: Get those computer difficulties handled fast
- TechForum: The ins and outs as well as the whys and wherefores
- News: the latest and the greatest up to date and in print just for you

Acorn Computing, the fastest growing magazine in the Acorn market, costs £2.95. Get your own copy next month, or subscribe today for the lowest cost subscription with the added value of TWO disks every month.

Make sure you'll get your copy by filling out the coupon below and handing it to your newsagent. Or why not take out a subscription and have the magazine delivered direct to your door with *two* disks every month. Take a look at page 31.

Acorn COMPUTING

NEWSAGENTS ORDER

Please reserve a copy of *Acorn Computing* magazine every month until further notice

☐ I will collect ☐ I would like it delivered to my home

Name: _____

Address: _____

_____

Postcode: _____ Tel No: _____

Note to Newsagent: *Acorn Computing* should be available from your local wholesaler. If not contact David Wren on 0625 878888

on to them from the program.

If your printer allows IBM ProPrinter emulation you can do the whole print process in one go by switching on the *outlines* feature – the program then uses the IBM character set to create the various boxes on the pay slip.

I prefer this option, despite having to reset my printer, as it is more cost effective. Sheet feeding on my laser printer under ProPrinter emulation was a problem as three and a bit pay slips fitted on one A4 sheet resulting in part slips on the top and bottom of pages.

I could have reconfigured the number of lines on my printer each time but opted for a very small Basic program (VDU2,1, 12,3) to throw a page after three payslips.

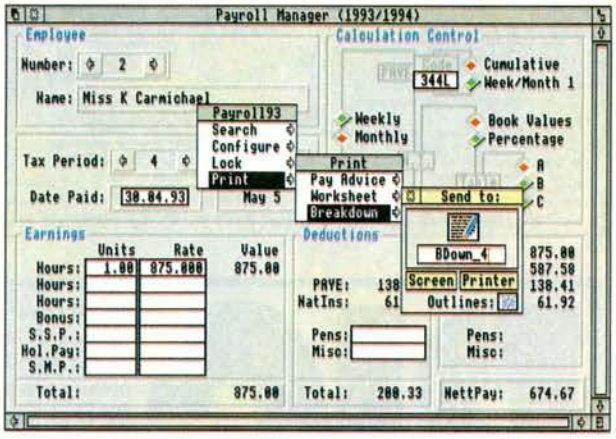
The finished pay slips look professional, although the staff found them confusing at first due to the way basic pay and overtime were shown, as they were used to only total amounts being shown rather than calculation rates as well.

Another print option is to use the drawfile templates and place them on the master pages of a DTP package like Impression. You can then export the file to Impression and print everything in one go using standard printer drivers.

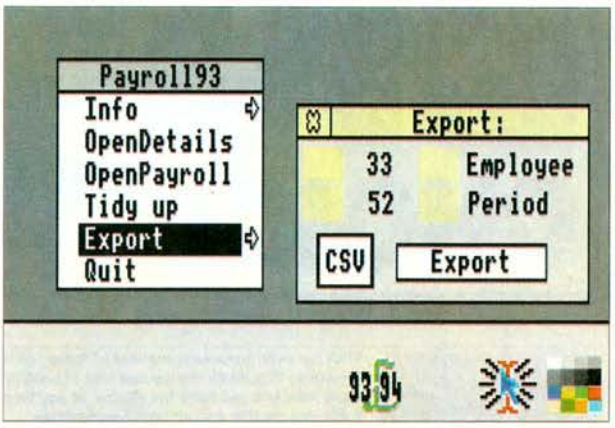
I particularly like the CSV export facility for current or all data. Details can be imported into spreadsheets and/or graphing packages for analysis. It also *future proofs* the product to some extent giving compatibility with other RISC OS accounts packages for direct updating of payroll accounts. Silicon Vision have built-in the links if other software houses want to take advantage of them.

The one thing I would have liked to see is some form of security device, even something as simple as a password facility to keep prying eyes away from other peoples' wage details. It will also be very interesting to see just how much time is saved at the end of the tax year when P60s are issued and all details sent off to the tax office.

Additionally, I wonder how easy it will be to update the program when required due to changes announced in the Budgets. However, since the introduction of the unified budget in November 1993 there is plenty of time to get the software adapted ready for the new financial year in April.

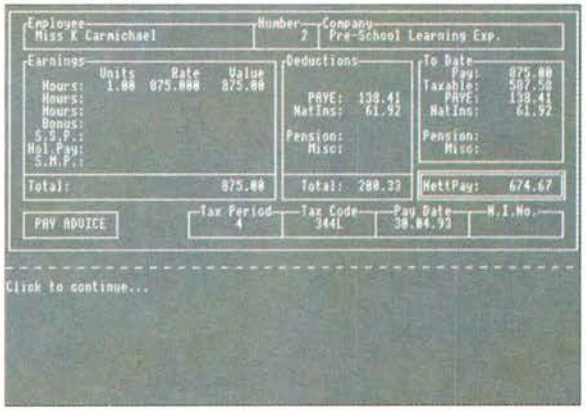


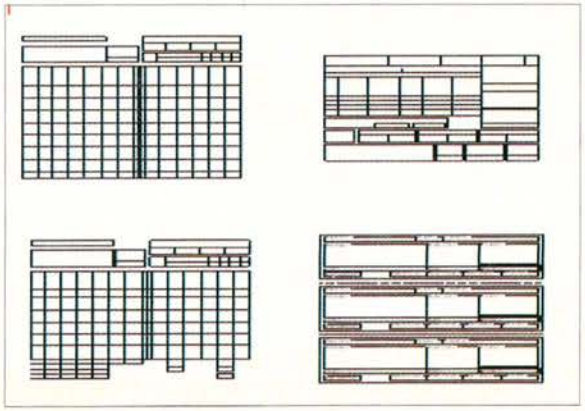
● *The breakdown is very useful – especially if you pay in cash*



● *The export options allow further work in other packages*

● *A payslip printed to screen*





● *The templates for worksheets, payslips and P60s*

Summing up

Payroll Manager represents excellent value for money. It is realistically priced and soon pays for itself with saved man-hours. It is simplicity itself to set up and use, and does everything you need it to do.

It is also refreshing to find a manual which has not decimated a rainforest in its production and is written in plain English.

The few problems I have described are niggles which are more than balanced by the fact that references to virtually all tax and N.I. tables become obsolete. I would recommend this package to any small business who finds wage calculations a time-consuming nightmare.

£99 +VAT +delivery

THE ANSWER TO ALL YOUR KEYBOARD PROBLEMS

ERGO-KEYBOARD
The ERGO-KEYBOARD is for you if your keyboard is nearing the end of its life or packed up completely, or if you would just like a better keyboard for your Acorn.

Modern Ergonomic design
▲ Built-in wrist support
▲ Curved low profile keyboard
▲ Quiet "tactile" feel keys

Robust construction
▲ Full 2 year guarantee
▲ Reliable membrane key-switch
▲ Min operating life-30 million ops

Industry standard layout
▲ 102 key PC style UK layout
▲ International versions available

MEDE™ mouse emulation
▲ Keyboard control of Acorn desktop

Acorn compatible
▲ Acorn mouse socket ▲ Reset button
▲ Standard power on defaults
▲ Suitable for A3/4/500, A4/5000 & A4 series

All trademarks acknowledged
Official education orders accepted
Also available form all good Acorn dealers

STOP PRESS
A3000 version available
£129 + VAT + Delivery

24 hr credit card telephone & fax order service available for immediate dispatch

CASTLE TECHNOLOGY

Ore Trading Estate, Woodbridge Road, Framlingham, Suffolk IP13 9LL. **Tel: 0728 621222.** Fax: 0728 621179

ILLUSIONS

42 Wimborne Gardens, Ealing, London, W13 8BZ.

artworks **tutorial Only £7.95**

For that professional edge in your artwork, learn all the tricks of the trade through this comprehensive 7 part tutorial, which starts where the manual leaves off...

spring **pack Only £15.95**

A seasonal package bringing you the ArtWorks Tutorial (see above), 3 issues of Illusions Disk Magazine (worth £7.50) and 3 disks of the latest PD software, from games to review

magazine
1 issue : £2.50
6 issues : £14.50

This issue contains a PD disk & articles on:
- Acorn News
- Squirrel 2
- Programming
- Games
- Education

Illusions Disk Magazine is a bi-monthly publication for all 32Bit Acorn users

BIG CHOICE

No PD Library offers a choice of PD as wide as Skyfall does. So don't bother collecting other PD libraries catalogue discs. Send for the one that counts. And choose Skyfall.

Please send £1 for the Preinted Catalogue and demo disc to;

SKYFALL PD

PO Box 2220
Birmingham
B43 5RZ

The Spoken Word

as featured on this month's MegaDisk

Send us your MegaDisk with **£11 (inc VAT & p&p)** and we will return it and the latest version of The Spoken Word with six pictures and an utility to make your own.

••• 50% OFF ••• 50% OFF ••• 50% OFF •••

A monster offer on talking programs

Wyddfa Software
FREEPOST CS50A
Llanberis LL55 4BR

Wyddfa Software

The Font Management System for Acorn RISC computers

Easy Font is the revolutionary new product which allows you complete control over your fonts. Easy Font is simple and easy to use - a necessity for home use or for professional DTP. It also offers features never before seen in the Acorn DTP world.

The Font Management System.

An application beyond it's time.

With the ever increasing number of fonts available it's inevitable that you'll need some way of controlling them. Easy Font lets you have the choice, at any time, of which fonts you want to use without compromise.

Easy Font

This is a typical font menu from a document processor.

Text font
Corpus
Homerton
Trinity

Click on Memphis in the Easy Font window.

This is the font menu directly after the above operation, and as you can see, Memphis is now available.

Text font
Corpus
Homerton
Memphis
Trinity

With Easy Font you can add new life to those old fonts by giving them a condensed, oblique etc at the click of a mouse button.
In fact there are 19 transformation you can perform on a font, and these changes are available to applications that are running as soon as you've clicked the mouse button. You can even see a sample of the font before using it in an application.

Plus choose a FREE font disk with every Easy Font...

Disk 1
CrossOver Ian
Athens MINIMAL
DoubleDeco Runic
ROOFTOPS

Disk 2
OpenCross Stiff
BULKY Shalom
SingleDeco Wendy
BookSolid

Disk 3
Minimalist MEMPHIS
Cross ROOFTOPS2
LeftStiff PointOne
NEONLIGHTS

Font Disks are available separate for £5 + VAT

fabis computing
95 Fabis Close • Swadlincote
Derbyshire • DE11 9SL
Monday - Saturday 9am - 7pm
Sunday 10am - 6pm

Phone Now
(0283) 552761

*All trademarks and copyrights are duly acknowledged.

Features include :
- Comes with FREE font disks containing 7 NEW font families which gives you 140 different outline fonts.
- Searches through files and documents and installs any fonts which it identifies. Recognises over 20 of the most common file types, like Impression 2, Artworks, Pipedream, Advance, Ovation, etc.*
- Make new weights and styles for existing font families, and have them immediately available for use.
- Allows you to install fonts at the click of a mouse button; no need to restart the application.
- No limit to the amount of font families that you can add to Easy Font.
- Comprehensive 23 page, step by step guide. Also supports interactive help.
- Replaces the need for many !Fonts and !MoreFonts.
- Doesn't use large amounts of memory. Typically 80K wimpslot for 400 font families.

And the price...
only £25 + VAT
please add £1 p&p and VAT to the total

Dealer enquires welcome
Credit cards welcome
Site licences available

RISC OS 3.1 and a Hard Drive are required to use Easy Font.

"It's a masterpiece"
Mr.H, Leicester
One of our many satisfied customers

Roses are red...

Teri Paul takes a dip in the pool of public domain

ONE of the topics you can't get away from in the PD world is music. There are hundreds of trackers, samples and effects and a few players. Would it be blasphemous to ask just how many are needed? Are they used or just listened to once then the disks reformatted?

The type of music you like will determine which trackers you'll keep, but your interest in the nuts and bolts will decide which playback software you use. Over the next few issues I'll be covering this type of software.

First comes a new utility from David J. Seery called **PlayTrack** – version 1.06 Mk II. PlayTrack is aimed at the more experienced user who wants analysis of, and details on, the Tracker module being played. However, the less demanding are able to use the program to play their trackers in a simple and straightforward manner.

The controls are cassette/video recorder-like with fast forward, rewind, pause, stop, play and a basic volume controller. However, there are a host of options and facilities at your disposal: Pattern position counter, internal speaker toggle, mute button, module and tune statistics, eight channel playback and stereo positioning, independent stereo, detailed samples list, user controlled tune buffer, machine code re-drawn eight channel vu-meter, display sample waveform and hear sample, oscilloscope display, tune monitor and the ability to save the tune as Relocatable Module.

The main menu is accessed from the iconbar and holds the usual options such as save, load and quit. Open leads to a menu of 10 entries from which you can open any of PlayTrack's windows – keyboard shortcuts are available throughout and the detailed textfile manual gives the details.

Load a tune and the Control Window and Tune Information Window appear. The Control Window holds five icons to control the tune, plus a position counter showing the current and total positions.

The internal speaker and mute buttons can be toggled on and off. The default sets the internal speaker to off – irritating but solvable, as a red bar at the bottom of the window controls the volume. From David's comments he is not happy with this and is working on it, so check the version number you order.

The Tune Information Window details the filename, size in bytes and kilobytes, number of voices, patterns and speed as well as the tune's name and author. You'll also be told the instruments and the format of the piece.

To control the stereo positioning you'll need the Stereo Positioning Window – understandably enough. PlayTrack allows full 8-channel independent stereo when needed, with channels 1 to 4 displayed along the top and 5 to 8 at the bottom.

Each channel can have seven positions in its predetermined range – alter this by clicking on the left or right arrows.

Yet another window – The Samples Window – shows all the samples a tune uses with its number, name, volume, and length.

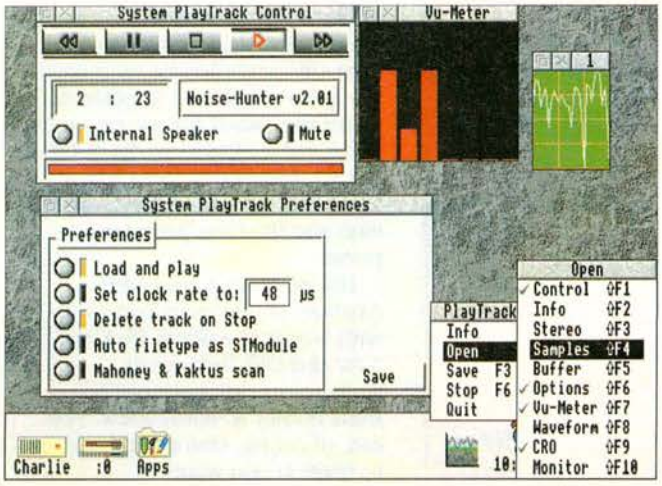
PlayTrack maintains a buffer in the Relocatable Module Area where it loads tunes to be played – this means you always have enough workspace to play a tune. However, the workspace has to be as large as your largest tune so rather than setting it for you this buffer is *dynamic* so it can be altered.

Just type the number you want into the writeable icon at the top of the window and either press return or click on the Initialise Buffer bar. This bar will slab in and the size of the buffer will be adjusted.

To help you with this is a *used* and *free* section so you can see how full the buffer is. This can be saved permanently from the Preferences Window where you can also load and play options, set the sound system DMA clock and opt for track deletion when it has finished playing, among others.

Effects are provided by the Vu-Meter and the Sample Waveform Window. The latter is good to play around with though you can also use it to type a sample number into the writeable icon so drawing its waveform. You can also hear the sample by clicking on the *hear* button.

The Oscilloscope Window displays the output from the channel shown in the title bar. You can increase the channel number by pressing Select



● *See, hear, examine and organise your favourite tunes*

This month's featured PD

Program	Library
!ModulInfo	Five Star Marketing
!PlayTrack	David Seery (Subscription disk)
!Reflect	Digital Phenomena
!WinScreen	Five Star Marketing

➤

over the window or decrease it with Adjust. Last but not least is a directory called !Music where you can keep your Tracker files.

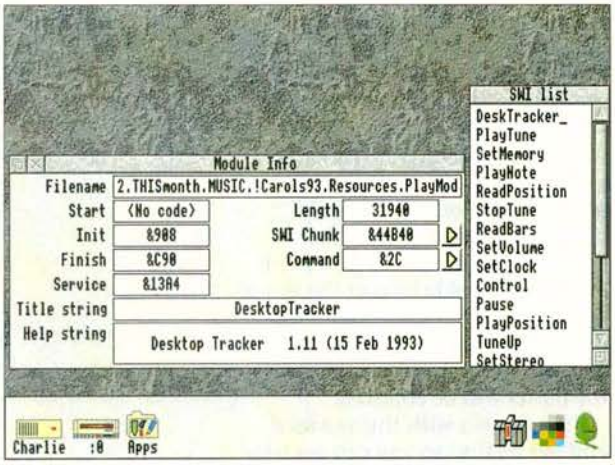
All in all a nice piece of software but it can be a little unstable and refused to play a couple of trackers. It also makes a few too many assumptions for my taste. However, it does give you a lot and I'll certainly be keeping a look out for future versions.

Use it or lose it

Are removable modules the bane of your life? Does !Merge leave you cold? Enter **!ModulInfo** from Erik van de Pol. You no longer have to load Edit to find out the version, or load it into RMA to use Help modules.

If space is a consideration – and when isn't it – ModulInfo is a boon as this utility gives you easy access to the version number and lists the embedded commands and SWI names without having to resort to any other utility.

ModulInfo loads itself on to the iconbar. To discover the intimate details of a module drag it from the filer window to the iconbar – and that's all there is to it. ModulInfo does expect modules that are legally written and who can blame it.



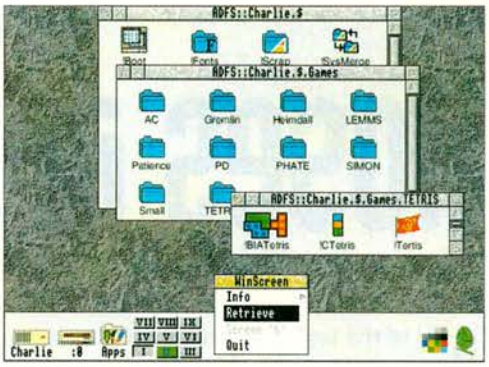
● *All you wanted to know about modules but were afraid to ask*

Norwegian based Bjorne Malmanger has a RISC OS 3 application based on a Windows idea to make it possible to have numerous *screens* on your 32-bit Acorn. Called **!WinScreen** you click on the icon to change screen and as you do so the windows are stored so that they'll return when reselected.

If you prefer you can control this via the keyboard using left Shift and left Control keys with keys 1 to 9 on the keypad.

The dark xor field on the icon shows you where the window can be moved. This can be changed by using Adjust – you can't move it to the current screen.

Using Shift and Adjust and the window dragbar moves you to another screen. Retrieve will return all the windows and you don't have to do this before quitting the program as it does it for you.



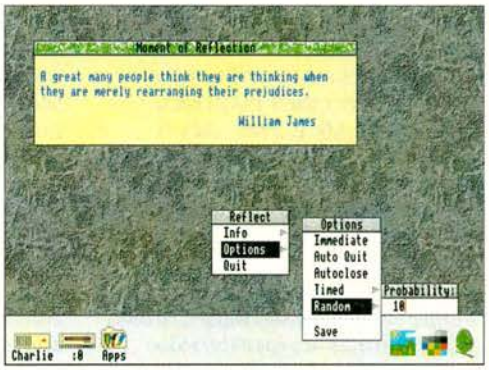
● *How about a spot of reglazing?*

Mirror, mirror

Digital Phenomena and Paul Vigay have come up with **Reflect** to add a certain touch of humour, culture or spiritual enlightenment to your day. Simply click on the icon for a short quote or *thought for the day*.

Clicking Select gives a random quote from the database. If you click on this quote window you can access another quote while Adjust closes the window. There are a couple of options available to you to set up Reflect to your liking.

The Immediate option gives you a quote as soon as Reflect is loaded while AutoQuit doesn't load the program on the iconbar but closes the program as soon as the first quote has appeared. I found opting for both ideal if you want a little inspiration each time you boot up your machine. Just add the program to your !Boot file.



● *A thought for the day – every day*

The addition of the Autoclose option is a nice one, automatically closing the window after a certain time – two seconds for each line of the quote. To drive someone mad go for the Timed feature which gives you a quote after a certain number of minutes varying from 1 to 60. You could randomise both the *bon mots* and the time period if you prefer.

The program comes with a database of quotes in Text format with words of wisdom from the New and Old Testaments, Shakespeare, Michaelangelo and John Wesley to name a few. You can, of course, change and add to these as you want.

PD LIBRARIES

8-BIT HOUSES

8-bit Software, 17 Lambert Park Road, Hedon, Hull, East Yorkshire HU12 8HF.
BBC PD, 18 Carlton Close, Blackrod, Bolton BL6 5DL.
HeadFirst PD, 97 Chester Road, Southport PR9 7HH.
JJF PD, 49 Hollyberry Close, Winyates Green, Redditch, Worcester B98 0QT.
Mad Rabbit PD, PO Box 4, Crigglestone, Wakefield, West Yorkshire WF4 3XE.
Masterdisc, 2 Seaview, Hoylake L47 2DD.
Welsh Boys PD, 88 Queen Street, Barry, South Glamorgan CF62 7EE.

32-BIT HOUSES

3PD Swapshop, 66e Picardy Road, Belvedere Kent DA17 5QN.
Alpine PD, PO Box 25, Portadown, Craigavon BT63 5UT.
APDL, 39 Knighton Park Road, Sydenham, London SE26 5RN.
Arcaynia, PO Box 1927, Sutton Coldfield B74 3QZ.
ArchAngel PD, PO Box 41, Exeter, Devon EX4 3EN.
Archimedes Fractal Group (AFG), 30 Bowen Drive, West Dulwich, London SE21 8PN.
ARM PD, 109 Woodland Drive, Cassiobury, Watford WD1 3DA.
ARMistic PDSL, 136 Wellesley Road, Ilford, Essex IG1 4LJ.
Craig Beech PD, 30 The Deerings, Harpenden, Herts AL5 2PE.
Datafile, 71 Anson Road, Locking, Weston-Super-Mare, Avon BS24 7DQ.
Datastream, 34 Norbreck Close, Great Sankey, Warrington, Cheshire WA5 2SX.
Different Ideas, Eyton House, Eyton, Leominster, Herefordshire HR6 0AG.
Digital Phenomena, 104 Manners Road, Southsea, Portsmouth, Hampshire PO4 0BG.
DigiTech, 20 Downing Crescent, Bottesford, Scunthorpe, South Humberside DN16 3LS.
Eureka PD, 78 Rawlinson Road, Southport, Merseyside PR9 9NE.
Gem PD, 15 Partridge Down, Oliver's Battery, Winchester, Hampshire SO22 4HL.
HeadFirst PD, 97 Chester Road, Southport PR9 7HH.
LowCost PD, 6 Furzeland House, Sheephouse Way, New Malden, Surrey KT3 5PH.
Moonlight Graphics, PO Box 3569, Cape Town 8000, South Africa.
Naked PD, Fayence, Fulford Road, Fulford, Stoke-on-Trent ST11 9QT.
Planet PD, 37 Manor Drive, Berrylands, Surbiton, Surrey KT5 8NF.
Skyfall, PO Box 2220, Birmingham B43 5RZ.
Swop It PD, 7 Salterns Terrace, Bideford EX39 4AG.
The Chroma Project, 153 Holt Road, Fakenham, Norfolk NR21 8JF.
Westbourne Services, 34 Bradley Street, Wooton-under-Edge, Gloucester GL12 7AR.

ONE STOP STORAGE

HARD DRIVES

A3000 / A3010

_40MB	15MS IDE	175
_60MB	15MS IDE	195
_80MB	15MS IDE	215
120MB	15MS IDE	269
170MB	15MS IDE	339
210MB	15MS IDE	379
250MB	15MS IDE	415

A3020

_40MB	15MS IDE	135
_60MB	15MS IDE	155
_80MB	15MS IDE	175
120MB	15MS IDE	219
170MB	15MS IDE	289
210MB	15MS IDE	329
250MB	15MS IDE	369

The above Drives are complete with all fittings

A3xx/4xx/4000/5000

CONNER

120MB	17MS IDE	159
170MB	17MS IDE	179
250MB	15MS IDE	219
340MB	15MS IDE	299
170MB	16MS SCSI	189
340MB	15MS SCSI	389
540MB	12MS SCSI	479

MAXTOR

245MB	15MS IDE	229
345MB	15MS IDE	329
545MB	15MS IDE	529
120MB	15MS SCSI	159
213MB	15MS SCSI	229
245MB	15MS SCSI	269
345MB	15MS SCSI	379
545MB	12MS SCSI	529
1.0 GB	10MS SCSI	699

QUANTUM

_85MB	15MS IDE	149
127MB	15MS IDE	179
190MB	15MS IDE	199
270MB	15MS IDE	249
520MB	12MS IDE	549
_85MB	15MS SCSI	159
127MB	15MS SCSI	189
190MB	15MS SCSI	209
270MB	15MS SCSI	259
520MB	12MS SCSI	569
1.0 GB	10MS SCSI	799

DENTON SECURITY DRIVES

Denton security drives are hard drives that are mounted in removable caddies. These caddies can be removed and stored in a safe or taken to a different site. Each caddy is locked in position to prevent the drives from being removed during operation. Extra caddies are also available so that more than one drive can be used in the same unit.

(Requires SCSI port)

Sinlge system	130
Dual system	195
Quad system	375
Extra caddy	35

Add the cost of the appropriate SCSI drive.

OPTICALS

FUJITSU

128MB INT. (A5000)	549
128MB EXT.	639
Double Shutter	18
128MB DISK	29

SONY

650MB EXT.	1495
650MB DISK	89

Star Buy
213MB SCSI
3.5" LOW PROFILE
£199

TAPE DRIVES

Superb "Disaster Recovery" and Data archiving systems. It's not a question of if you'll lose data, it's when. The fact is that everybody loses data sometime. It will cost a minimum of £25,000 to rebuild 40 megabytes of data

(Requires SCSI port)

DENTON

250MB COMPLETE	495
500MB COMPLETE	629
1.0 GB COMPLETE	795
2.0 GB COMPLETE	875

The above systems are complete with cables, tape and software.

FLOPTICALS

21MB INT. (A5000)	229
21MB EXT.	295

(Requires SCSI port)

CD - ROM

TOSHIBA 3401	395

(Requires SCSI port)

I / O CARDS

HCCS

A3/4xx 16 bit SCSI	99
A5000 16 bit SCSI	99
A3/4xx IDE	69
A3000 IDE+U/Port	79
A3010 IDE	79

MORLEY

A3xx/4xx A3000/5000

16 bit SCSI	139
Cached SCSI	179

COMPUTERS

A3010 Action Pack

FD System	335
_40MB HD System	499
_60MB HD System	519
_80MB HD System	539
120MB HD System	599

A3010 Learning Curve

FD System	599
_40MB HD System	765
_60MB HD System	785
_80MB HD System	805
120MB HD System	859

A3020

FD System	650
_40MB HD System	775
_60MB HD System	795
_80MB HD System	815
120MB HD System	859

A4000

_80MB HD System	850
240MB HD System	980
340MB HD System	1069

A4

2MB FD System	1350
4MB HD60 System	1635
4MB HD80 System	1699
4MB HD120 System	1749

A5000 (IDE) MULTISCAN

_80MB HD System	1225
240MB HD System	1359
340MB HD System	1449

A5000 (SCSI) MULTISCAN

120MB HD System	1399
200MB HD System	1459
330MB HD System	1549
520MB HD System	1699
1.0 GB HD System	1949

Star Buy
245MB IDE
3.5" LOW PROFILE
£199

All prices exclude VAT & carriage. Prices & specifications may change without notice. E. & O. E.

TECHNOLOGY MATRIX, 2 FIELD MEWS, DENTON, MANCHESTER, M34 2BQ. TEL: 061-320 3087

SKYFALL

Telephone : 021 358 7078
PO Box 2220, Birmingham, B43 7SF.

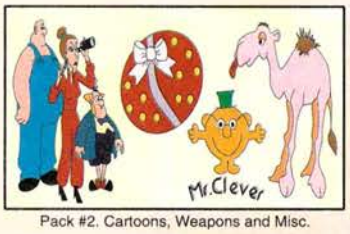
SUPER VALUE CLIP ART

All 12 packs cost just £50, on 36 normal discs.
Or £35 on 20x1600k discs (HD computers only).

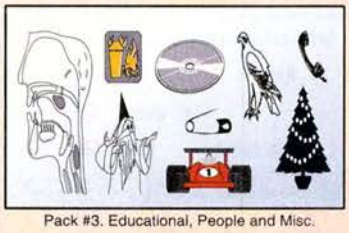
Individually packs cost £6 each, or £24 for any 5 packs.

Clip Art packs 1 to 12, contain over 2300 items in Draw format, Suitable for use with Ovation, Impression, Acorn DTP, Artworks, etc. Many of the discs contain extra items not listed here. Available on HD discs only when complete set is Ordered. Please add £1 for out Demo Disc and Printed Catalogue of PD Software. UK/Euro postage is free. Elsewhere £2 per pack.

Pack #1. Fun Cartoons and Christmas.

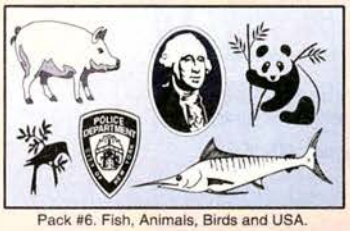


Pack #2. Cartoons, Weapons and Misc.


Pack #3. Educational, People and Misc.

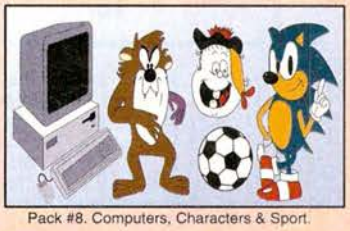
Pack #4. Boats, Weddings, Aircraft & Sport.

Pack #5. Food and Houses.

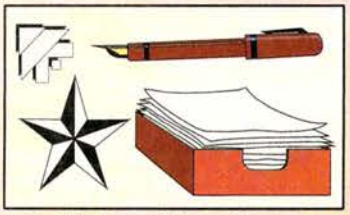


Pack #6. Fish, Animals, Birds and USA.

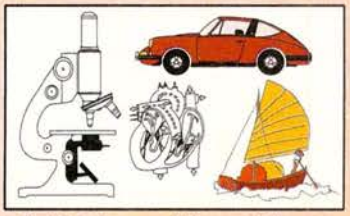
Pack #7. Males & Females and Misc.


Pack #8. Computers, Characters & Sport.

Pack #9. Household, Maps and Military.


Pack #10. Borders, Effects and Business.

Pack #11. Cartoon Art, Food and Animals.


Pack #12. Transport, Biology and Religon.

The short list

Steve Turnbull and Clem Vogler take a quick look at an interesting selection of programs

Vigil: Observing the not-so-obvious

RISC OS ONLY 3

ONE of the hardest parts of programming in a multitasking environment is finding out what your program is doing deep in its wimp slot – especially when it goes wrong. If you have Acorn's C or ARM Assembler you'll also have a copy of DDT – Desktop Debugging Tool – which allows you to stop, examine, single-step and alter any multitasking program either at the machine code level or source code level, while it runs.

But if it's out of your price range, or you prefer to program in Basic, you could do a lot worse than buy Vigil. It's a very nice programmers aid which let's you examine what's going on with multitasking programs while they're running. You can examine or modify workspace and code, dump variables if it's in Basic and monitoring displays can be updated on a centisecond basis as the program runs.

There are utilities to display the names of all the modules currently loaded in a window – a lot handier than typing *modules. Clicking on one brings up an info window from which you can display all SWIs, commands and the code itself – which can be saved out too. One missed opportunity was access to the help and error text on commands but that would be simple to add.

A utility to display pointer position in terms of absolute screen position, relative screen position, position on the current window's workspace plus the current window and icon's handles, all in either decimal or hex.

When you want to examine a multitasking program it has to be registered with Vigil first, this is done either by including a SWI within the machine code, but more simply by dragging the Filer icon on to Vigil's iconbar icon, the application is then run and automatically registered.

For a registered application you can display its wimp slot in byte, word or mnemonic format and from there you can carry out, search or modify actions on the memory itself. Another option is available to keep track of what Wimp messages are sent to the application, with the ability to mask out the ones you don't want recorded – like the null reason code.

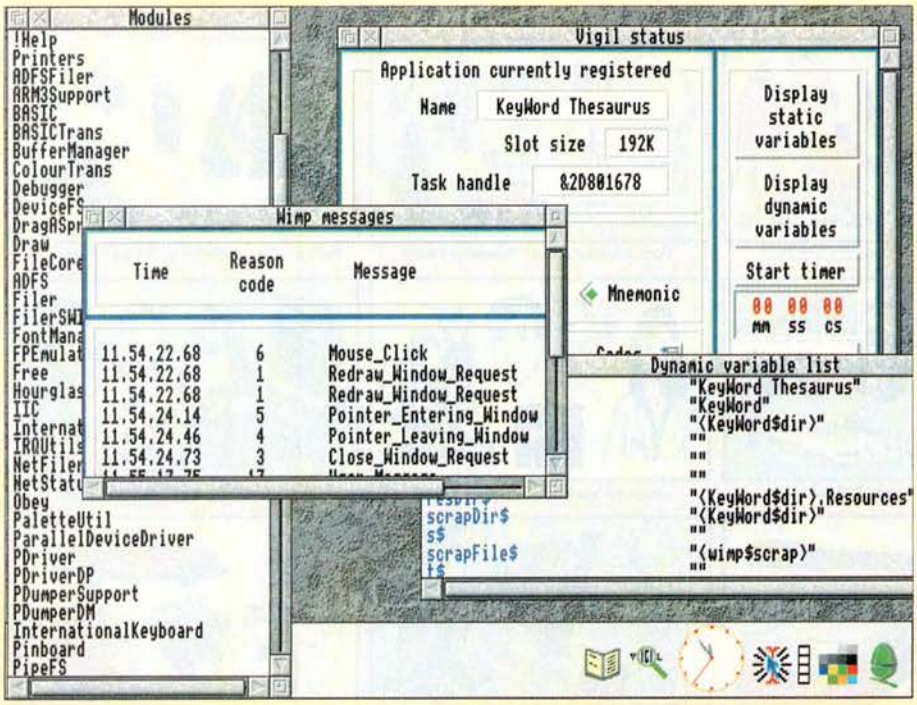
If the application is in Basic you can display all variables in integer, floating point and string sections, although due to the way Basic stores them it's not always easy to find the one you want. Vigil also provides some useful SWIs that, with a single instruction, cause a dump of registers r0 to r7, or can compare them with the values at the last dump – very handy.

I liked it and it will join my set of programming tools.

Steve Turnbull

PRODUCT SPOTLIGHT

Product: Vigil
Price: £24.95
Supplier: Rheingold Enterprises, 7 Waterbridge Court, Appleton, Warrington WA4 3BJ
Tel: 0925 210657



● *There's a lot of information available from Vigil*

First Steps in PROGRAMMING ACORN RISC OS COMPUTERS

THIS is a beginner's book. It covers programming in BBC Basic V–the structured version of Basic supplied in rom as standard on Acorn machines. There is a brief excursion into ARM Assembler programming which includes some tuition on memory addressing.

Despite its slimness the essential ground is covered and the book achieves its object of teaching you to write non-trivial Basic applications. It even manages an appendix describing all Basic keywords.

All the information in this book has been widely available for years in the BBC Basic Guide and elsewhere. What justification is there for rehashing such common fare?

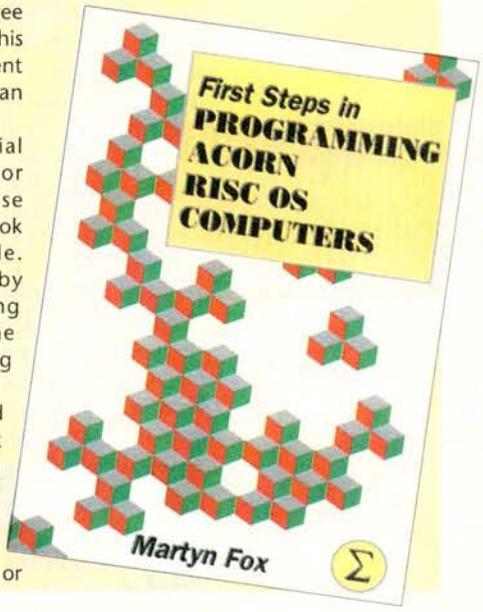
Fox uses a brisk, informal style aimed at keeping things simple. When, for example, he describes how a function returns a parameter he simply introduces a piece of relevant code and convinces you that it works. Only then does he explain what a function is and why it has a particular syntax and argument. This is the reverse of the academic approach, which bemuses you with formal definitions of things before you are allowed to use them.

I thought Fox's approach really did minimise the difficulties. Spend three hours a day at the keyboard with this book and you'll end up a competent Basic programmer–well, better than me, anyhow.

The book is marred by editorial slips which have allowed minor errors to go uncorrected. These would be less troublesome in a book intended for the knowledgeable. Beginners will be confused by references to "myprog" changing unannounced to "myfile", or the abbreviation for *CAT being promised, but omitted.

If you can't write Basic and would like to, this book will meet your needs. There is an old argument as to whether Basic is a good beginner's language or whether you should learn something more formal, like Pascal, or more practical, like C. In its favour, BBC Basic is easy to learn, vastly better than early, unstructured Basics and, crucially, it's already present in your micro.

Clem Vogler



PRODUCT SPOTLIGHT

Product: First Steps in PROGRAMMING ACORN RISC OS COMPUTERS by Martyn Fox (ISBN 1 85058 521 0)
Price: £14.95
Supplier: Sigma Press, 1 South Oak Lane, Wilmslow, Cheshire SK9 6AR
Tel: 0625 531035

ASM_Help: Data at your fingertips

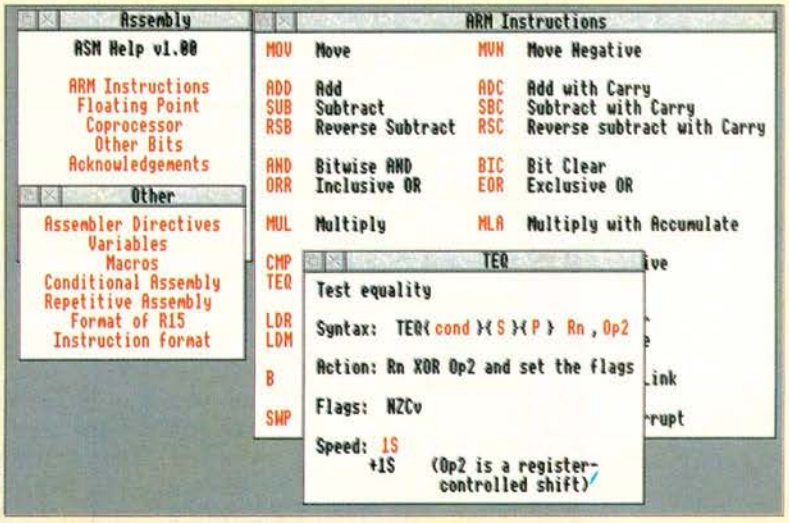
THUMBING through manuals on ARM assembly can be tedious especially if it's only that you've forgotten if the *Compare Negative* command is CMN or CNP. And that's where ASM_Help comes in.

It uses, and comes with, the extremely versatile StrongHelp application where help information is displayed in windows and keywords in the text can be clicked on to take you to another more explanatory page.

The system is very easy to use and compact, allowing multiple StrongHelp files to be loaded and accessed simultaneously. Another feature of StrongHelp is that it provides an interactive help window just like !Help – except that the window can be configured to either slide away from the pointer, revealing what's beneath it, or jump away to the top or bottom of the screen.

To run the program you launch StrongHelp and then double-click on the !ASM_Help icon to load the help information – unfortunately you can't just double-click on ASM_Help to start. Having said that it *is* possible to install the ASM_Help inside the StrongHelp application so that it loads in when StrongHelp is run, if you'll always want it. The data itself is fine and seems accurate. There's not a great deal to it – but then that's the nature of the beast. What it does have, apart from listing all the ARM code mnemonics, is detail on the syntax for the Acorn Desktop Assembler and also the Basic Assembler which will be invaluable for someone working on either system.

Steve Turnbull



● *The red text accesses further information*

PRODUCT SPOTLIGHT

Product: ASM_Help
Price: £15.00 (£10 for StrongEd users)
Product: Stallion Software Ltd., Arundel House, Arundel Road, Camden, Bath, Avon BA1 5JX
Tel: 0225 339090

KleinFS: Packing them in tight

RISC OS ONLY 3

THE idea of cramming more data into less disk space is very attractive – it saves money and, for big files, it can give faster loading times. There are a number of compression utilities for Acorn machines and they come in two varieties: Ones that create a single new file and cram data into it – Spark, SparkFS and ArcFS – and those that use the standard Acorn file structure and compress data as it is saved.

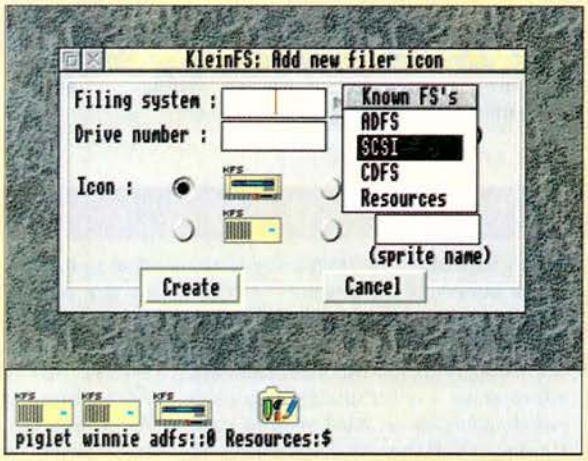
PRODUCT SPOTLIGHT

Product: KleinFS
Price: £17.95
Supplier: PTW Software, 7 Heath Lawns, Fareham, Hampshire, PO15 5QB

Of the latter type there has only been Compression from Computer Concepts which provided the CFS, but now there's a contender in the form of KleinFS from PTW Software. Now it could be argued that there's no need for two, but KleinFS has some big advantages.

Instead of providing its own compression capability KleinFS uses the standard Acorn Squash module provided with all Acorn RISC OS 3 machines, the upshot of which is that any compressed files can be accessed by anyone with Squash, regardless of whether they have KleinFS or not. And if someone uses Squash to send something to you it's possible to use the, much simpler, KleinFS to unpack the data.

When running a filing system replacement like CFS or KleinFS you create additional device icons on the bottom left of the icon bar. So, for instance, initially you get a new KFS floppy disk icon – in addition to the original one – then if you want to compress to the hard disk as well you create a new KFS hard disk icon, likewise with any other one SCSI, RAMFS and so on.



So you can easily double the number of icons and it can get very confusing. With CFS all its icons appear in a block together, with KleinFS each icon appears to the left of the icon it is compressing for. But in addition you can get KleinFS to remove all the other device icons, and put them back too.

Because of the way it works, CFS requires a special directory location to be set to hold temporary files – KleinFS does too, but it uses the !Scrap directory without needing it to be set specifically. Finally KFS will continue to operate even if its front-end is removed – which will save 64k of space, but it also puts itself (compressed) into the ResourceFS where you can restart it quickly from the Apps icon.

On a typical collection of code and sprite files CFS reduced it to 57% of its original size while KFS managed 61%, and CFS was quicker. So you must weigh the compression advantages against ease of use – and KleinFS will get better if and when Acorn improve their Squash module.

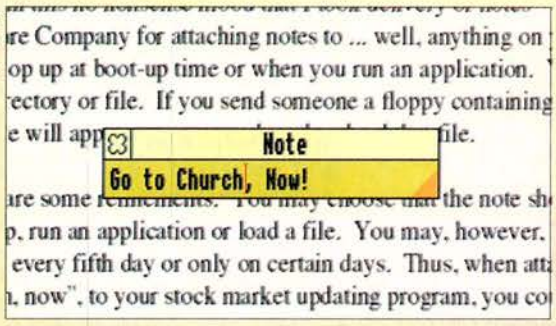
I was sceptical at first but KleinFS is very good indeed.

Steve Turnbull

Notes: Send a message to yourself

HANDY utilities are two-edged swords. They promise to slick up your act by archiving your files, loading your desktop or making the coffee. The trouble is, they distract you from the task in hand. Can you afford to drink coffee while on a serious alien-zapping mission?

It was in this no nonsense mood that I took delivery of Notes – a utility from the Really Good Software Company for attaching notes to ...well, anything on your micro. You can have them pop up at boot-up time or when you run an application. You can also attach them to a disk, a directory or file. If you send someone a floppy containing a file with a note attached, the note will appear on screen when they look at the disk.



● *Notes can be attached to documents*

There are some refinements. You may choose that the note should appear every time you boot-up, run an application or load a file. You may, however, require that the note only appear every fifth day or only on certain days. Thus, when attaching the note," Go to Church, now", to your stock market updating program, you could ordain that it should appear if today is Sunday.

As only the weekday newspapers carry the share prices with which you update

Larger: Making molehills out of mountains

LARGER is not just another backdrop program, it takes the whole concept of dropping icons on the back of the desktop and refines it. With Larger the backdrop icons are stacked on plinths (which are optional – just about everything is) in the order you put them there, but when you change mode they're rearranged to stay visible on screen.

Applications and files are dropped to the right and directories are put to the left. However, that's also optional because they can be independently pushed left, right, up or down, or left where they're dropped where you can then create *hierarchical* backdrops.

For example you can have a top-level one where you may put a basic selection of applications, but from there you can create a sub-backdrop which appears as a special icon.

Double-clicking opens a new backdrop which can have its own selection of applications, files and directories. You can have a backdrop for programming, one for letter-writing, another for business and so on. Or you could break them down by person – of course each of these backdrops can have further sub-backdrops and so on. Another problem solved by Larger is the one you get when you start to save something and find you've forgotten to open the Filer window of the place it's supposed to be going. Now you can just drop it on to the Larger backdrop which accepts it, saves it into its own application directory and puts the appropriate icon on the backdrop. You can then open the Filer window and drag it into there.

The feature of Larger that gives it its name is the ability to have a huge virtual desktop with windows off the screen. Larger also provides you with a map window showing the position of all windows in relation to the current visible area.

You can scroll the visible screen across the virtual desktop or move directly by clicking on the map.

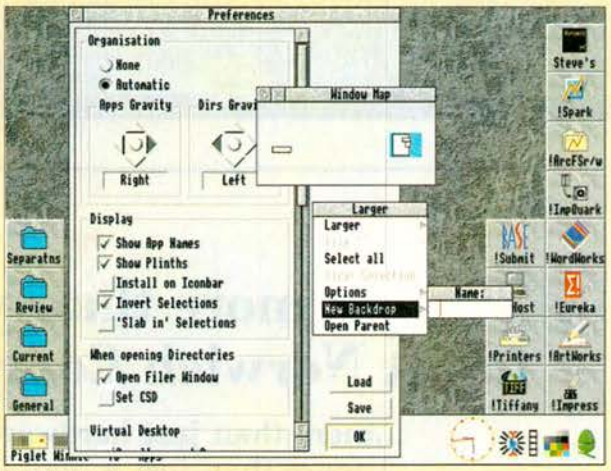
The idea is that you can have different task windows in separate areas of the desktop and move to them when you need them, hence giving you more space. Larger also lets you hide all the windows related to a specific application which then become a single iconised icon on the backdrop.

A very competent utility – which uses 128k – now permanently installed on my machine.

Steve Turnbull

PRODUCT SPOTLIGHT

Product: Larger
Price: £10
Supplier: Warm Silence Software, St Catharine's College, Manor Road, Oxford OX1 3UJ
Tel: 0865 54382



● *In Larger just about everything is optional*

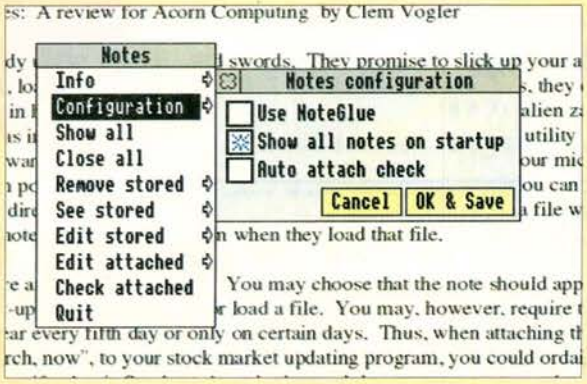
your stock market program, you are unlikely to be troubled by the appearance of this particular note. God's work and mammon's may proceed without mutual interference. Computer freaks will realise that, in this sense, notes is a parallel processing aid. Much of what you can do with Notes can be achieved with Acorn's Alarm or with any wp package or text editor. The main benefit conferred by Notes is the glue facility, whereby you attach your note to a particular directory object. Much embarrassment can be saved by sticking a reminder: *lines 60–600 pinched from someone else's space invader game–remember to disguise them before publishing* to your latest version of Alien Adventure.

There are various style options for making your notes more attractive, but a note being something rough and quick, I doubt if you'll want to waste time using these. Not an essential utility but at £9.95 probably worth pinning to your iconbar.

Clem Vogler

PRODUCT SPOTLIGHT

Product: Notes
Price: £9.95
Supplier: RGSC, 39 Carisbrooke Road, Harpenden, Herts AL5 5QS
Tel/Fax: 0582 761395



● *Glueing notes to objects is easy*

ARM TECH (UK) LTD

AUTHORISED ACORN DEALER

86 Meadowbank, Moor Lane, Holway
Holywell, Clwyd. CH8 7EF
Tel/Fax :- 0352 715840

VISA

OPENING HOURS MON-SAT 10am-6pm SUNDAY 10am-2pm

FEBRUARY

Drives IDE SCSI

	IDE	SCSI
170meg	£209	£249
250meg	£269	£.....
340meg	£350	£.....
545meg	£575	£599
1 gig	£.....	£999
1.3 gig	£.....	£1099
1.6 gig	£.....	£1199
2 gig	£.....	£1299

Case For 2 gig Drive £145
For External Drives Please Add £89 For Case/Cables.

A3000/A3010 130 meg 2½ Int Toshiba Drive With iDE MultiPodule Power Supply And Buffer Kit.. £399

CD-ROM DRIVES

Toshiba3401 Fastest Drive On The Market. Photo CD Compatable, MultiSession And Double Spin Speed.
External Unit £499

Toshiba4101B Twin Speed Photo CD Compatable Multisession.
External Unit £399

OPTICAL DRIVES

Fujitsu Optical Hard Drive (SCSI) 128meg Removable Discs That Are Read/Write With A Data Transfer Rate Of 600k/Sec.
Internal Unit (A5000) £699
External Unit £788
128meg M/O Discs £35

SCSI / IDE CONTROLLERS

Morley 16bit Scsi	£159
Morley 16bit Cached	£199
Morley A3000 Scsi	£169
HCCS IDE	£89
D.T. Projects IDE	£79
IDE 300/400/3000	£89

MONITORS

Acorn Col. AKF30/40	£199
Acorn Multi AKF18	£299
Microvitec Multi-Sync	£399
Taxan 875	£859
Taxan 795A	£489

HARDWARE UPGRADES

ARM 3 Upgrade with FPA socket	£169
Turbo Driver CANON / DESKJET	£49
Dongle Dangle	£7
Dust cover (Keybd + Monitor)	£12
Acorn Floating Point Upgrade Pack	£99
Hawk V9 Video Digitiser	£199
I/O Expansion Card	£79
ArmStick JoyStick Interface	CALL
Keyboard Extension cable	£8
Midi Upgrade to I/O Exp. Card	£27
Midi Expansion Card	£69
Mouse Extender	£8
Micro Mouse (Clares)	£31
Scanlight (A4) (CC)	£299
Scanlight Junior 256 (CC)	£199
QuickShot 2 Turbo Joystick	£11
Risc-OS 3	£89
Risc-OS 3 Carrier Board 300/400	£21
Serial Upgrade A3000	£20
User & Midi Podule A3000	£49
VIDC Enhancer (State Machine)	£30
Vision Digitizer Mono Int £59/Ext	£79
Vision Digitizer Colour Int £79/Ext	£89

BOOKS

Acorn Education Directory	£4.95
Archi Assembly Language	£14.95
Risc OS 3 First Steps	£14.95
Archie Game Makers Manual	£14.95
Archi Operating System	£14.95
C: A Dabhand Guide V.3	£16.95
Acorn DTP Adv User Guide	£14.95
ArtWorks Made Easy	£14.95
BBC Basic Guide (NEW 3.10/11)	£19.95
Budget DTP	£12.95
DabHand Guide To Impression	£14.95
Game Makers Manual	£14.95
Graphics On The Arm	£14.95
Guide To Wimp Programming	£14.95
RISC-OS 3 PRM's	£99
RISCOS Style Guide	£10
Acorn DTP Manual (Acorn)	£10
AASM Manual (Acorn)	£25
ANSI C v4 Manual (Acorn)	£25
DDE Manual (Acorn)	£25
A540/A5000 Tech Ref Manual	£65
A3000 Technical Ref Manual	£30
First Impressions (With Discs)	£35
Good Impressions (With Discs)	£31

PRINTERS

CANON BJ-10SX / Turbo	£199/£245
Canon BJ-10 Ink Cartridge	£17
SheetFeeder for BJ-10E/EX/SX	£57
Canon LBP-4 Laser Printer	£989
Canon BJC600 Colour With Turbo	£599
Canon BJ800 Colour With Turbo	£1489
Refills for BJ10/DJ(Twin) BW/Col	£12/£13

RAM UPGRADES

A3000 IFEL 2 meg.	£55	A3020/A4000 2 To 4 meg	£89
A3000 4 meg.	£159	A400 RAM per meg.	£49
A3010 2/4 meg.	£49/£149	A5000 2 To 4 meg.	£89

ACORN COMPUTERS

A5000-2M80HD / A5000-L /Curve Sys.	£1276/£1318
A5000-4MHD160 / 4MHD160 L/Curve.	£1445/1488
A5000-4MHD160 Home Office System.	£1531
A4000-Home Office Sys. with ARM 250 Processor, Acorn Colour Monitor, 80meg HD. EasiWriter 2, Desktop Database. etc.	£935
Home Office With Acorn MultScan.	£977
A4000-HD80 / A4000-HD80 L/Curve.	£850/892
A4000-HD80 MultiScan/ A4000-HD80 L/C	£892/£935
A4-4meg 60megHD / A4-2meg Floppy	£1699/£1399
Acorn pocket book.	£212
A3010-Action Pack / A3010-L/Curve.	£339/£637

A3010 ULTIMATE EXPANSION

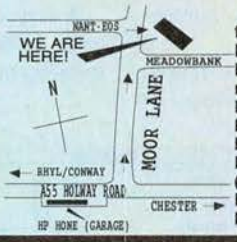
MultiPod+2 slot +HD space	£42
MultiPod+20mHD+PSU2 slot	£221
MultiPod+60mHD+PSU2 slot	£299
20meg HD for MultiPodule	£169
60meg HD for MultiPodule	£245
PSU+Fan+Buffer Kit (A3010)	£30
MicroPod Scsi (Inc CDFS)	£99
MicroPod Analogue	£29
MicroPod Colour Digitizer	£79
MicroPod HiVision Colour	£129
MicroPod Midi	£49

MY WORLD UTILITY DISCS

These discs are top quality multi-layer drawings for use with the My World program. Ideal for Schools. MWOO1 & MW003 are a useful tool for help within the National Curriculum (KS 1/2)

Disc MW001 ANCIENT EGYPT	£12.95
Disc MW002 CHRISTMAS	£9.99
Disc MW003 ANCIENT GREECE	£14.95

Where to find us



From Chester follow old A55 past Holywell until you see Moor Lane on your right, turn down Moor Lane, we are at the bottom on the right hand side (Big White Farm Gate) From Rhyl (As Above) but turn left into Moor Lane before Holywell.

Terms

EEC add 17.5%vat to all prices except books. Prices and specifications subject to change without notification. Carriage is free (Except for books/Software/Risc-OS 3.1 & PRM's) these will be shipped at cost. Goods offered subject to being unsold and/or available. Goods not offered on trial basis. Next day delivery please add £12 + vat. Otherwise All goods shipped within 48 hours subject to availability. Restocking fee on non-defective returns.

APPLICATIONS

A3010 JoyStick Control	£17
Acorn Advance	£99
Armadeus (Clares)	£59
Art Works (C)	£129
Archivist Pro	£38
ArcTerm 7 (Serial Port)	£59
Business Card Designer	£8
ColourSep (ICS)	£15
Desktop C v4 (Acorn)	£199
Desktop Thesaurus (RISC)	£20
Desktop Tracker (L/Edge)	£54
DeskTools (RiscOs 3 Only)	£10
Digital Symphony	£44
Diary+ (Arm_Tech)	£12
Diary+ For Schools	£12
Easy Writer (Icon Tech)	£159
Equasor (CC)	£39
Eureka 2 (Longman)	£99
Font FX (DataStore)	£10
Fontasy (ICS)	£15
Home Accounts (Minerva)	£35
Hearsay 2 (Beebug)	£74
Image Outliner (Iota)	£89
Impression (CC)	£129
Impression Junior (CC)	£76
Impression Bus Supp (CC)	£49
Labeller (Arm_Tech)	£10
Ovation (Risc)	£109
PC Emulator V 1.8 (Acorn)	£99
Pinpoint (Logotron)	£89
PipeDream 4 (Colton)	£169
Poster (4Mation)	£79
Pro Artisan (Clares)	£76
ProDriver DJ500/550 Colour	£40
Prophet (Apricote)	£159
Render Bender v2 (Clares)	£105
Rhapsody v2 (Clares)	£49
REVELATION v2 (Logotron)	£99
Schema (Clares)	£99
ShapeFX (Data Store)	£9
ShowPage (CC)	£119
Snippet (4Mation)	£26
Studio 24+ (EMR)	£149
TypeStudio (Risc)	£39
Vector (4Mation)	£79
Vox Box (Clares)	£49
Wordz (Colton)	£99

GAMES

Axis (TBA Software)	£22
Alderbarran (Evolution)	£27
Bambuzle (Arxe)	£17
Battle Chess (Krisalis)	£25
Blitz (Arxe)	£17
Break 147 & Superpool (4D)	£26
Birds Of War (4D)	£29
Blitz & Bambuzle	£30
Chess 3D (Micro Power)	£15
Chocks 2 Compendium (4D)	£30
Chopper Force (4D)	£23
Chuck Rock (Krisalis)	£19
Crystal Maze (Sherston)	£34
Dungeons (4D)	£29
Elite (Hybrid)	£32
Enter the Realm (4D)	£20
Fervour (Clares)	£19
Fun School 4. -5/ 5-7 / 7+	£21
GODS (Krisalis)	£19
Hero Quest (Krisalis)	£24
HoledOut Compendium	£22
James Pond	£20
James Pond 2 RoboCod	£22
Krisalis Collection	£25
K.V. (High Risc)	£12
Lemmings (Krisalis)	£22
Lemmings EXTRA Levels	£17
Lemmings 2 Tribes	£25
Magic Pockets (BitMap)	£22
Manchester Utd Europe	£20
Noddy's Playtime	£22
10 / 10 Maths/English Each	£21
10 / 10 Early Learning 3/7	£21
MIG 29 Fulcrum (Dom)	£26
Populous (Krisalis)	£25
Spheres of Chaos	£20
Simon The Sorcerer	£34
Sim City (Krisalis)	£29
Stunt Racer 2000 (4D)	£29
SWIV (Krisalis)	£20
TechnoDream	£21
Turbo Challange 2	£22
Xenon 2	£22
Zool (Gremlin)	£22
Zelanites (Micro Power)	£19

IF THE TITLE YOU REQUIRE IS NOT LISTED, PLEASE GIVE US A

Studio Graphics

TOP QUALITY CLIP-ART (DRAWFILES) IDEAL FOR SCHOOLS. WE HAVE 10 SETS AVAILABLE

SG001 Egypt 100+Files	£8
SG002 Flags 270+Files (2D)	£15
SG003 General 100+Files	£8
SG004 Xmas (1) 100+Files	£8
SG005 General 100+Files	£8
SG006 Borders/Cartoons	£8
SG007 Borders For Poster	£10
SG008 Borders For Draw	£8
SG009 Greek Clip-Art	£10
SG010 Xmas (2) 2 Discs	£12

Archive
The Subscription Magazine for Archimedes Users

You get more than you bargained for at Norwich Computer Services

...more than just hardware and software, more than just a mail order service.

Whether you use computers for **education, home or business,** we can offer you first-class advice on the right **Acorn systems** and software to suit your situation. Our mail order service is **fast, courteous and flexible,** backed by an after-sales service from our team of experts.

We also publish **Archive magazine,** to keep you up-to-date and offer **special discounts** on **hardware and software.** And Archive is more than just a magazine – it's an interactive support group for Archimedes users.

ncs
NORWICH COMPUTER SERVICES

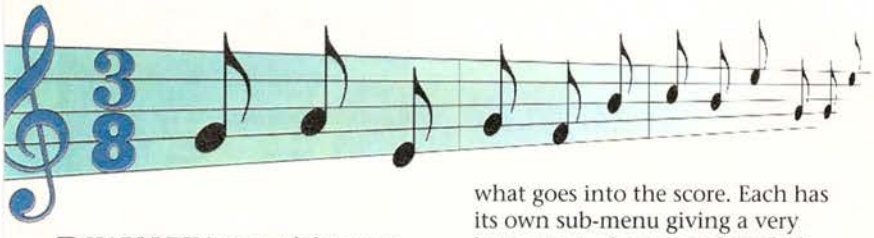
96a Vauxhall Street, Norwich NR2 2SD Telephone 0603-766592 Fax 0603-764011

Acorn
AUTHORISED EDUCATION DEALER

For your **Free** copy of Archive and more details of Norwich Computer Services, return this slip to Norwich Computer Services, 96a Vauxhall Street, Norwich NR2 2SD.

Name Address

Postcode



Making music

Ian Waugh looks at the latest version of Rhapsody

RHAPSODY is one of the most popular music programs for the Archimedes. It has been around since 1990 and has proved a firm favourite both in the home and in education.

This latest version has many new features and additions, mostly of an advanced nature, but before we get to those we'll take a quick look at the program's basic functions.

In control

Rhapsody is essentially a notation program. You write notes on to the stave and play it back using the Arc's built-in sounds or over Midi. The two Control Panels from earlier versions have been combined, sensibly, into one. The arrows on the left of the Panel control the position of the cursor and the placement of the notes.

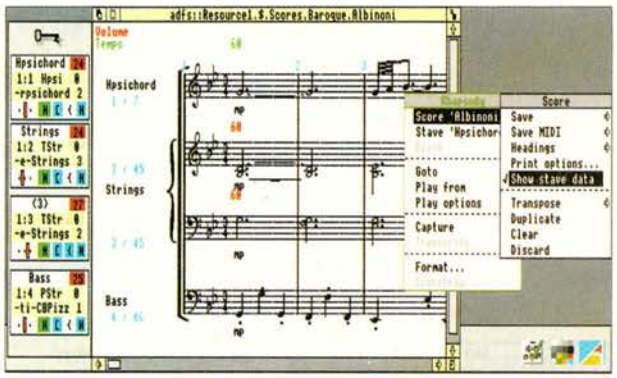
Seven selection icons – notes, rests, accidentals, ties, bar lines and special symbols – determine exactly what goes into the score. Each has its own sub-menu giving a very large range of notes and symbols.

The cursor is a very important part of Rhapsody and shows where you are in the score. You can enter notes to the left, to the right or at the cursor position. Items are placed by clicking on the position arrows. It may seem a bit odd at first but you soon get used to it.

However, you can also drag symbols from the Panel to the score and this can be much quicker and more intuitive. Notes can be altered too by dragging them across the stave which makes for very fast editing. In spite of the third update, there are still a few areas which could be improved. Although the program checks the bars as you enter notes, it can't automatically adjust them later on.

For example, the program warns if you enter a note which is too long for the bar instead of having the sense to split it in two and tie it. You can add and delete notes in an existing bar, so altering the sum of the durations, and the program doesn't complain.

In other words the program doesn't check the bars once they've been entered. It will check the vertical alignment of the notes and warn you if they are out of step and will also automatically correct simple errors but only up to a point.



● *The new Show Stave Data option gives you precise information about each stave in a score*

Edit it

There are a host of edit functions. Among these you are able to flip stems, beam and de-beam notes and adjust the spacing between notes, although Rhapsody makes some spacing adjustments automatically.

You can suppress the printing of triplets and accents which is useful if the music contains a lot of these symbols and you don't want to clog the score with the obvious.

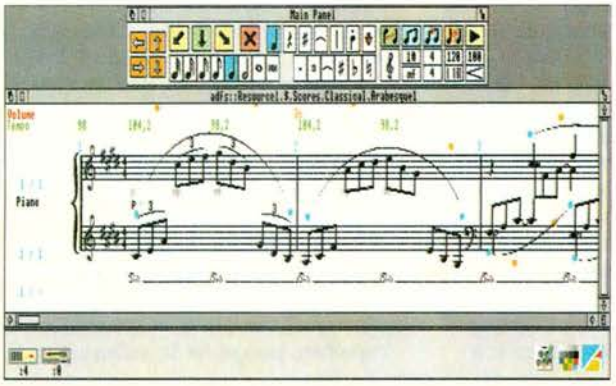
By inserting dynamic markings you can enable Rhapsody to provide 15 different levels of velocity when playing over Midi. You can also create crescendos, decrescendos and gradual changes in tempo.

There are 1st and 2nd time bar markers, DS, DC and Coda signs, rehearsal marks, and you can enter lyrics beneath the music. An auto-space option adjusts the notes to accommodate the text which saves a lot of time.

One of Rhapsody's most interesting features, which it has had since version one, is the ability to define ornaments such as trills. Another characteristic is support for grace notes, both acciaccaturas and appoggiaturas, and spread chords which let you specify the speed and the direction of the notes. There are global edit functions such as copy ➤

PRODUCT SPOTLIGHT

Product: Rhapsody 3
Price: £85.06 (upgrade £40.85)
Supplier: Clares Micro Supplies, 98 Middlewich Road, Rudheath, Northwich, Cheshire CW9 7DA.
Tel: 0606 48511
Requirements: 2Mb ram



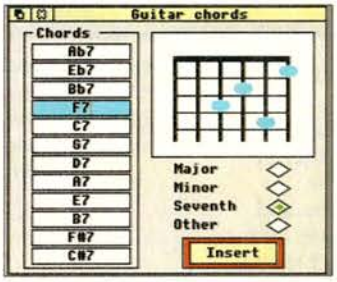
● *Rhapsody III now supports more music symbols than ever*

➤

and merge, plus transpose, adjustment of note stems, accent, and note type – including small notes, crosses for percussion and old note symbols.

Rhapsody III now also supports guitar chords – the grid-type symbols you see above the notes in sheet music. It comes with 36 default chords but you can create your own preferred versions if you wish. These chords are strummed during playback. Cute.

Actually, the chord symbols are placed on a *blank* stave which you must create. You can use this for text – say, lyrics consisting of several verses – and Rhapsody also supports small, percussion and so-fa staves.



● *The Guitar Chords feature contains 36 default chord types and lets you create your own*

Note capture

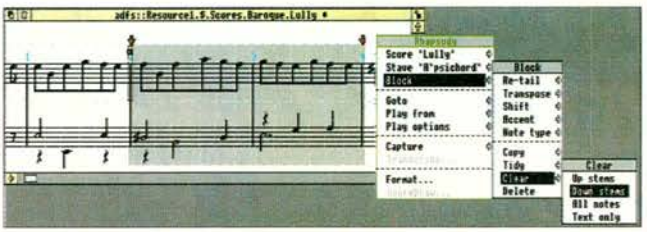
As well as entering a score with the mouse, you can also play it in from a Midi keyboard using one of three methods of entry.

In step-time you select the note durations from the Panel and play the note pitches from the keyboard. In semi-real-time you hear a metronome beat and the note durations are determined by how long you hold the notes.

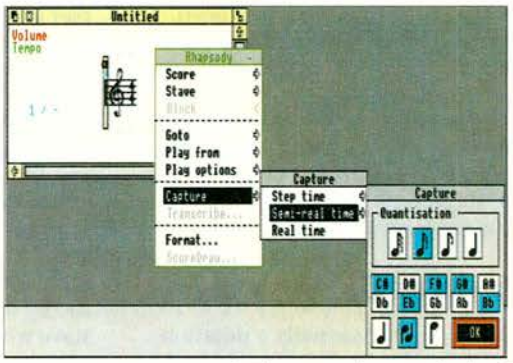
Real-time capture involves two operations – recording notes and transcribing them. The transcription process involves a sort of on-the-spot quantisation. The routine is not happy with anything very complicated and you'll get best results if you play at a slow tempo.

However, all systems work and some sort of real-time note entry will radically speed up the entry of a score. And you can always go back and edit it later.

One of Rhapsody's main attractions has always been the ability to print out scores. You can adjust the amount of space above and below the staves. Vocal scores, for example, won't need as much space as piano scores. You can bracket staves together and use Pack to reduce the width of the bars, so squeezing more notes on to the page.

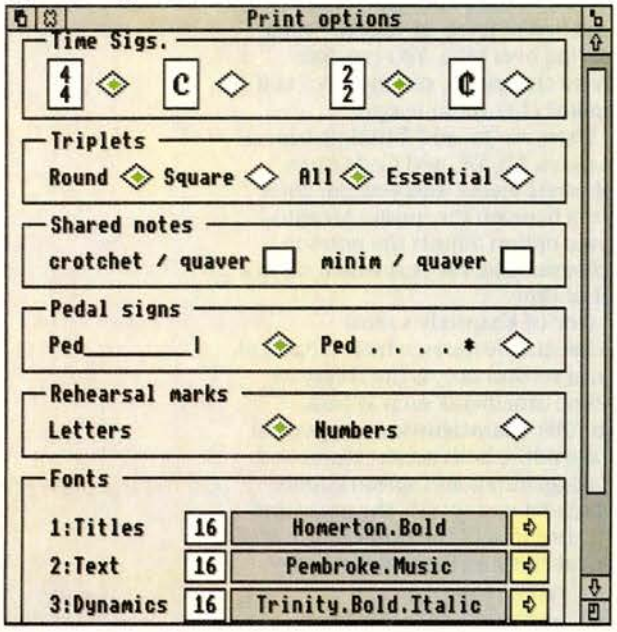


● *The are lots of block edit functions you can apply to sections of the score*



● *There are three methods of entering notes from a Midi keyboard*

● *The Printing options now support fonts to a greater degree*



Print option

Rhapsody III has more font options than its predecessor and you can select different fonts for text, titles, dynamics and so on. There are lots of print options, too, such as scale which alters the size from 50 to 150 per cent, compress which reduces the horizontal scale and pack which is similar to the pack function in the block edit routine.

However, Rhapsody III still uses sprites and the result is a chunky printout with some symbols out of alignment. For better quality output it interfaces with Clares' ScoreDraw program which converts the scores into Draw images.

Rhapsody can read both Maestro and Standard Midi Files and it can be used with files produced by other Arc programs which support SMFs. There are thousands of third-party Midi files and although most are on Atari ST and PC disks they are easily converted to Arc format.

Other features include auto-save and a preferences box for setting various default values. There is a !Config program which lets you alter settings such as the default Midi channel for the click and the printer formatting margins. You can also create your own voice lists using !Edit so you can select Midi sounds by name rather than number.

Rhapsody III comes with a completely new manual, unlike the separate booklet supplied with Rhapsody II, and takes you through the basic stages of entering a three-part score on two staves. It has a good index plus a collection of hints and tips.

Summing up

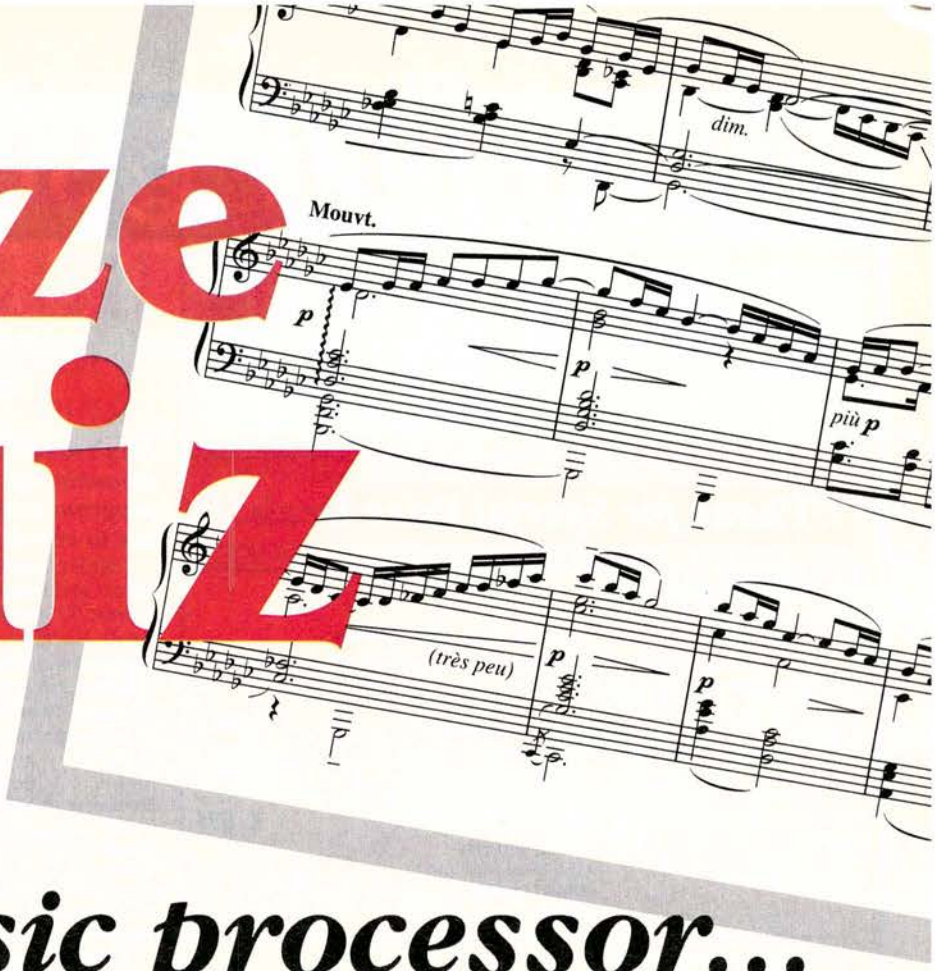
Rhapsody III now has many of the features Rhapsody I users would have liked and, in fact, many of the enhancements were suggested by users.

The new features make scores easier to enter and edit, give you more music symbols and more control over the printing and layout. The trade-off is that it seems to run a little slower – it's written in compiled Basic – and a fast machine is a definite advantage.

If you're already an avid Rhapsody user you'll certainly want the upgrade. If you have Rhapsody I, the upgrade is definitely worthwhile although if you don't want the bells and whistles of version III, Rhapsody II is still available.

If you're looking for a music program to handle scores, Rhapsody III does a good job and has lots of features although if the quality of the printout is important, budget for ScoreDraw, too.

Prize Quiz



Which music processor...

1. ...is described in the *Acorn User* review (Feb '94) as **"quite possibly the most impressive program *of any kind* I have ever seen"**?

2. ...is probably the only program for Acorn computers which professionals discard Macs and PCs in order to use?

3. ...is described by composer John Rutter (who uses it) as **"the ideal way to put music on paper: user-friendly to the non-technological musician, capable of producing beautifully clear, elegant scores and parts, forgiving if you make a mistake, flexible and versatile"**?

4. ...is used by some of the world's top publishers, including Chester Music, Faber Music and Peters Edition?

5. ...is so fast that it takes just *0.1 seconds* to do a full-screen redraw?

6. ...is described in the *Archimedes World* review (Feb '94) as having achieved **"more than even Impression or ArtWorks"**?

7. ...prints music to the highest professional standards (see above)?

8. ...has produced the scores of such famous names as Michael Nyman, John Rutter, Peter Maxwell Davies, John Tavener and Witold Lutoslawski?

9. ...is so efficient that it occupies only **320K** of memory?

10. ...knows all the rules not only of music notation but also of music spacing and layout?

11. ...can handle even the most complex orchestral music, with up to *128* staves *per page* and full avant-garde notation?

Answers by post or phone to Sibelius Software.
The first correct entry drawn from the hat on 1 March wins a ***free copy of Sibelius 7****.*
No purchase required. Full rules available on request.

Sibelius 6: £160 +VAT
(discounts for Rhapsody/PMS users)

Sibelius 7: £485 +VAT
(normal price £760+VAT) – special price ends 28/2/94. Non-commercial users only. Subject to conditions – contact Sibelius Software before placing your order

Sibelius Software
4 Bailey Mews,
Auckland Rd,
Cambridge CB5 8DR
Tel: 0223 302765

Please send me a complete information pack about:
☐ *Sibelius 6* ☐ *Sibelius 7* ☐ Both
☐ Send me a **free demo disk**
AC2.94
Name: _____
Address: _____
_____
_____
_____ *Postcode:* _____
Telephone: _____

PINEAPPLE SOFTWARE

Special Offer!!

Free membership of the Pineapple Virus Protection Scheme is included with every computer purchased from us.

!!Phone for Special Price Deals!!

A3010 Computers

A3010 Action Pack
Includes Startwrite, & Zool, with demos of Lemmings, Chuckrock, Superpool and Fervour — 1Mb Ram **£ 339**
2Mb Ram add £ 49

A3010 Learning Curve
Includes 2Mb Ram, Colour Monitor, and Learning Curve Software as described below **£ 637**

A3020 Computers

A3020 System **£ 675**
Includes 2Mb Ram and Colour Monitor

MultiScan Monitor	add	£	42
60Mb Harddisc	add	£	150
4Mb Ram	add	£	99

A4000 Computers

A4000 HD80 System **£ 850**
Includes 2Mb Ram, 80Mb Harddisc and Colour Monitor

Multiscan Monitor	add	£	42
4Mb Ram	add	£	99
386 PC Card with 1Mb	add	£	225
486 PC Card with 4Mb	add	£	425
Learning Curve (See below)	add	£	42
Home Office (See below)	add	£	85

A5000 Computers

A5000 2M HD80 System **£1275**
Includes 2Mb Ram, 80Mb Harddisc and Multiscan Monitor

4Mb Ram	add	£	129
4Mb + 164Mb HD	add	£	170
Learning Curve (See below)	add	£	42
Home Office (See below)	add	£	85

A5000 ES - Econet System **£1175**
Includes 2Mb Ram, MultiScan Monitor and Econet

A5000 NS - Network System **£1275**
Includes 2Mb Ram, MultiScan Monitor and Ethernet

Learning Curve System

The Learning Curve System can be purchased with the A3010, A4000 or A5000 range of computers. It consists of an audio instruction tape and software including,- Acorn Advance, PC emulator, & Demos of Rhapsody2 Scoredraw, Voxbox, Fervour, Darryl the Dragon, Topography, smArt, The Crystal Rainforest, Naughty Stories and Arcventure.

Home Office System

The Home Office System can be purchased with the A4000 or A5000. It consists of an audio instruction tape and software including,- EasiWriter, Datapower, Pipedream 4, PC Emulator & Demos of Prophet and Almanac.

A4 Portable Computer

A4 2M FD System	Includes 2Mb Ram	**£1399**
A4 4M HD 60 System	Includes 4Mb Ram and 60Mb HD	**£1699**

Special *COLOUR PRINTER* Offer - BJC600

The latest in colour printer technology from Canon

Price includes a second set of ink cartridges **£480**

Other Items

All Acorn hardware and upgrades are normally available, please 'phone for prices. Many other printers and software items are also available.

Most items ordered before 4.30 sent by RETURN post

Acorn Authorised Dealer

!KILLER

Removes ALL known VIRUSES

Don't take chances with your valuable software. Use the program that Acorn themselves use to check for viruses.

!Killer, together with VProtect will detect and remove all of the currently known 52 families of virus (75 viruses in total). Because new viruses are being discovered all the time our virus protection scheme will provide you with 3-4 updates of the software each year. We can also offer immediate advice by phone.

Alien	*Aprilfool*	*Archie*	*Arcuebus*	*Axishack*	*BBCEconet*
Bigfoot	*Boohoo*	*Breakfast*	*CeBit*	*Code*	*DieHard*
Ebeneezer	*EMod*	*Ex_port*	*Extend*	*ExtendV2*	*FCodex*
Funky	*Garfield_1*	*Garfield_W*	*Handler*	*Icon*	*Image*
Image2	*Increment*	*IRQFix*	*Link*	*Mode87*	*Module*
MonitorDat	*MyMod*	*NetManager*	*NetStatus*	*NewDesk*	*Parasite*
Penicillin	*Poltergeist*	*Runopt*	*Shy*	*Sprite*	*SpriteUtils*
Taskmanager	*T2*	*Terminator*	*Thanatos*	*TrapHandler*	*Valid*
VanDamme	*Vigay*	*Whoops*	*Wimpman*		

Don't wait until you discover you have a virus!
One years subscription costs just £24.00

Low cost school and county licences available

Pineapple Colour Video Digitiser

Full colour video digitising is made easy with our very popular digitiser. The software features are still second to none and the hardware will now work with even the A3000/4000 series of computers using our MEA/2 adapter board.

Apart from all the normal features you expect from a digitiser, the Pineapple Digitiser will grab a sequence of video frames and replay them - even while still watching the incoming video!

The standard digitiser occupies a double width expansion slot, but the boxed version which is essential for A3000/4000 computers can also be used with A300/400/500 series computers where it will only occupy one expansion slot.

A300/400/500	**£199.00**
A3000 boxed	**£235.00**
A3010/3020/4000 boxed inc. MEA/2	**£260.00**

Internal / External Expansion Adapter

This adapter fits the A3010, A3020 & A4000 computers, providing a 64 pin expansion socket similar to the A3000. In the case of the A3000 two expansion slots can be obtained. This enables external devices such as our video digitiser to work with A3010, A3020 and A4000 computers.

MEA /2 £28.00

Pineapple PAL Coder

The Pineapple PAL Coder is a stand alone unit which provides a coded signal which can be recorded onto VHS or fed to any monitor or TV set with a coded input. The unit is inserted in the lead to the RGB monitor and provides an RGB output for the monitor together with a PAL coded output on a BNC socket. A second version also provides an output in S-VHS format as well as composite. Now available for Multiscan as well as standard monitors. Upgrade available for existing owners.

Standard Version £69.00 S-VHS £79.00

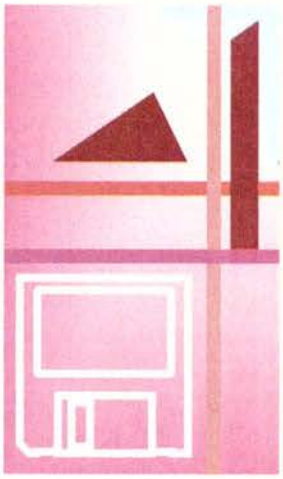
Terms:- Please add 17.5% vat.
Carriage FREE to mainland UK.
Phone for quote outside UK.
Official orders, cheques, and all major credit cards accepted.
Money back guarantee on all products

Pineapple Software
39, Brownlea Gardens
Seven Kings
Ilford, Essex
IG3 9NL

Telephone Hot Line service on all products
Tel 081 599 1476 Fax 081 598 2343

Taking Acorn to task

Michael Rozdoba dual action: Soothes pain and fights infection



WITH proteins and vitamin B5, the family column you can trust. For external use only, 25% extra free. So, how many Valentines are you getting this year? Well, I'm not surprised. Why don't you stop reading this and get a life?

Alternatively, if you can't find a life in your local supermarket, try putting finger to keyboard and participating in this forum. You know it makes sense.

Task handles

Back in the first TechForum of last December I mentioned a problem with task handles: When read from different sources – one being a WIMP filter – they can't be relied upon to have a constant value for any given task. Oops indeed.

Acorn have responded to this and confirm that only the bottom 16 bits are relevant and should be used. These will then give a unique constant handle. So if you have encountered this problem, get masking with &FFFF and all will be well.

Graphic tablets

If you use Watford Electronic's graphic tablet and it has been incapacitated since you upgraded to RISC OS 3, help is finally at hand, permanently I hope. In the December issue I provided a program to patch Watford's module which was causing the trouble.

Unfortunately, this only worked with one version of their module. Prompted by B. C. Southwell, I've modified this so that it should now work with several, if not all variants. You'll find the new !OS3_Fix on the subscription disk. Read its !Help file for instructions on how to use it.

Anti-aliased text and titles

Richard Blythe of New Quay asks about the use of anti-aliased text in window and menu title bars.

Although you can specify menu title data as for an indirected text icon – by setting bit eight of the data for the first menu entry – you can't set its icon flags, so it can't be made to use anti-aliased text by the Wimp.

Anti-aliased text can, however, be put into other window title bars but a problem can arise, as Richard points out, if a set of tool sprites are in use, such as those from Acorn's !NewLook. And it goes like this: When a window gets the input focus its title bar is usually highlighted in cream.

If a tool sprite is being used in the title bar, to permit highlighting it must contain some transparent pixels, so that when the background colour of the title bar changes to cream, this shines through the title tool sprite.

Here's where the trouble starts. If a window uses anti-aliased text in its title bar and it's rendered a bug in the Wimp it results in the background not being cleared before the tool sprite is plotted, followed by the text.

The result is that whatever is behind the window can be seen through the transparent pixels in the title bar and it looks horrible. This can be experienced in programs such as Frontier 2000.

Taking into account the additional facts that anti-aliased text can look poor on a standard monitor and that different applications use different fonts and font sizes, it all goes to spoil the consistent of the desktop appearance.

Richard also asked whether some clever person could write a module to avoid these problems. Well, someone already has, and they're called Acorn.

Subsequent versions of RISC OS will permit the user to have all uses of system font text – from icons to menus – to be replaced with a single fancy font, but we'll have to wait for it. In the mean time I'd recommend that programmers *don't* use outline fonts so that Acorn can provide the standard look and feel.

Text printing

Cheadle's Chris Beesley has been having problems trying to write a desktop application which can print text – is he a beginner you ask? Well no, he can't get it to work when the printer is turned off.

More precisely, if he tries to print when the printer is off, the whole desktop locks up and has to be reset.

Chris is using VDU 1,n and PRINT with a *FX3,10 to dump the text.

I've had similar problems myself when trying to print text by opening a file to the device Printer: and then writing to it, using commands like

```
P%=OPENOUT("Printer:")
BPUT#P%,E$;
```

However, unlike Chris's problem, this works okay until you try to stop the printing using

```
CLOSE#P%
```

which then results in the lock up.

Can anyone explain what's happening and how it can be avoided? A free banana skin will be awarded to the sender of the first solution received.

Paint and true colour palettes

RISC OS 3 gives direct support for 256 entry sprite palettes, this should include Paint which at first seems to work with these sprites. Alas, there are numerous bugs.

Expanding sprite size, using copy or move with export, and some other operations all fail to work correctly. More details next month.

Stop me, buy one!

Don't forget, 42 may be the answer, but we have yet to discover the questions. If you have a question, it is your duty to society to write in, so do it NOW.
To: TechForum,
Acorn Computing,
Europa House, Adlington Park,
Macclesfield SK10 4NP.

Impact-Pro

The Professional Database

ImpactPro seems to offer just about everything I need, is ridiculasly easy to use, needs only a tiny instruction manual, & is cheaper than the competition. Thanks a lot!

I.F. (Chester)

Sample letter from a satisfied business user

- Powerful relational facilities
- VERY easy to use
- Impression Reports
- Drag and drop card designer
- Calculations
- Powerful record filters
- Multi-line text fields
- External file field type
- CSV/TSV Import & Export
- Multi-column label printing
- Sorted sub-sets
- Image (sprite) fields
- Individual field formatting
- Multi-field indexing
- Field order mapping

At last, a professional, fully relational database, in the same easy to use format that has made Impact! so successful. Just about everything can be done by mouse clicks, and there is no language to learn or steep learning curve to climb. Yet ImpactPro offers many facilities normally only found on the more expensive and difficult to use programs.

Circle Software

Prices - exc VAT
Impact! £39.95
ImpactPro £65.00
Site licences £99 and £227

Write of Phone for full details
Free demo disc available
Credit card orders welcome

33, Restrop View
Purton, Swindon
Wilts. SN5 9DG
Tel: 0793 770021

C.S.

Computers		(ex VAT)
A3010 1Mb Action Pack	385.00	327.66
A3010 2Mb Learning Curve	730.00	621.28
A3020 2Mb System	775.00	659.57
A3020 2Mb HD60 System	950.00	808.51
A4000 2Mb HD80 System	975.00	829.79
A4000 2Mb HD80 Learning Curve	1020.00	868.09
A4000 2Mb HD80 Home Office	1070.00	910.64
A5000 2Mb HD80 System	1450.00	1234.04
A5000 2Mb HD80 Learning Curve	1495.00	1272.34
A5000 2Mb HD80 Home Office	1545.00	1314.89
A5000 4Mb HD160 System	1645.00	1400.00
A5000 4Mb HD160 Home Office	1740.00	1480.85
A4 2Mb Portable	1585.00	1344.68
A4 4Mb HD60 Portable	1900.00	1617.02
Acorn Pocket Book	240.00	204.25
Acorn Pocket Book Class Pack	2350.00	2000.00
Multiscan instead of standard monitor	add 50.00	42.55
HiRes instead of standard monitor	add 135.00	114.89
HiRes instead of Multiscan monitor	add 85.00	72.34

1 and 3 Year On-Site Maintenance Contracts Available

The BAD NEWS s that we've no more of our super deal Sportster/ArcFax packs.
The GOOD NEWS is that we've negotiated.... another

Special Purchase!.....

The latest PACE Microlin FX32 Plus v32bis, 14,400/Fax Modem + Arc Fax + Modem Cable.
even better value at only **£295.00** inc VAT *(£251.06 ex VAT)*

ArcTerm 7 Option still available: add only **£65.00** inc VAT when purchased with the above bundle

When you purchase your computer system from us don't forget to claim your free goodie bag containing:

A3010/A3020:	Mouse Mat & Mouse House
A4000:	As above **plus** box of 10 HD TDK Discs
A5000:	All the above **plus** 50 Capacity Disc Box

NEW RELEASES?

If you need a product which has not yet been released you can order with confidence from SENLAC, sure in the knowledge that you will be one of the first to receive a copy and that we do not cash your payment until the goods are ready.

See the box on the left for this month's bargain. Note that the modem is the new Microlin **FX32 Plus** and not the less well specified and less capable **FX**.

24 hours a day you can phone or fax your credit card orders to the numbers below. Cheques by post are even more welcome (processing credit cards cost us a small fortune)!

Send an SAE for a full price list.

SENLAC
Computing Limited
(AC0394)
PO Box 304
BRIGHTON BN1 1LE
Tel (0273) 208074
Fax (0273) 738258

Serious(?) Software

Accounts	
Prophet	177.50
Art/Graphics	
Artworks	145.00
Pro Artisan 2	124.00
Revelation Image Pro	147.00
Vector	88.00
Communications	
ArcFax	22.00
ArcTerm 7	68.50
Consumables	
Box 10 TDK DD 3½" Discs	8.90
Box 10 TDK HD 3½" Discs	12.50
High quality inkjet refills	Phone
Databases	
Data Power	145.00
Junior Database	52.50
S-Base 2 Personal	140.00
Squirrel 2	160.00
DTP/WP	
Impression 2	145.00
(inc. free upgrade to Impression Publisher)	
Impression Style	98.00
Wordz	104.00
Education	
Noddy's Playtime	24.25
Music	
Notate	59.00
Rhapsody 3	88.00
MIDI/Sampler (Econet)	88.00
Peripherals	
CC Colour Card Gold	275.00
HiVision (Int)	145.50
ScanLight 256	220.00
ESP SuperSound Card	290.00
Personal	
Almanac 3	75.00
Printers	
Canon BJ-10sx	205.00
Canon BJC600+cc dvr	605.00
LaserDirect HiRes 4	1040.00
Turbo Drivers	53.00
Spreadsheets	
Eureka!	115.00
Resultz	130.00
Utilities	
Investigator 3	52.00
Morpheus	34.95

GAMES!

Battle Chess	24.50	Play It Again Sam 1 or 2	21.25
Black Angel	29.25	Populous	25.25
Break 147 & Superpool	29.25	Real McCoy 1 or 2	24.95
Champions	25.25	Real McCoy 3 or 4	29.25
Crystal Maze	36.50	Repton 4	21.25
Cyber Chess	29.25	RoboCod - James Pond 2	24.50
Dungeon	29.25	Saloon Cars Deluxe	29.25
Haunted House	21.50	Sensible Soccer	24.00
Heimdall	21.25	Sim City	28.00
Hero Quest	25.25	Simon the Sorcerer	35.95
Krisalis Collection	24.95	Spheres of Chaos	21.25
Lemmings	21.75	Stunt Racer 2000	29.25
Lemmings 2	25.50	Virtual Golf	29.00
Lotus Turbo Ch. 2	21.75	Xenon 2	24.50
Magic Pockets	24.00	Zool	23.00

All Prices include VAT, Postage and Packing. PO Cash on Delivery: add £8.00 for orders up to £500. Errors & Omissions Excepted (E&OE)

Font-u-like

Ben Summers explores how to go it alone with the Outline Font Manager

ONE of the most striking features of RISC OS programs is the anti-aliased text that they use. It's clear, easy to read, fast to draw and looks good in any size – no other operating system on any machine offers such good font handling. What you may not have realised is that they are incredibly easy to use in your own programs thanks to the Outline Font Manager.

The font manager is located in rom on RISC OS 3 machines, and on disk under RISC OS 2. Although they can do similar things, the RISC OS 3 program has several new features, a new font format and an improved application interface.

This article describes how to use the new font manager, as the advantages of using its features outweigh the disadvantage of incompatibility with the old one.

In common with the rest of RISC OS, the font manager has been written to minimise the amount of work the programmer has to do to perform this common function. It can handle most of the text functions – change font, colour or size at any position within a string, and even justify it – all you have to do is tell it what to do.

Control is via a comprehensive set of SWIs. The interface is quite complex if you want to do anything fancy, but simple things are easy to achieve. I'll go through those first, and then explore some of the more interesting effects.

The fonts are stored as *outlines*, which is a description of what each character looks like, and the font manager renders them as bitmaps to be drawn on the screen.

To speed up the drawing process, it keeps outlines and bitmaps in the *font cache*, an area of memory. You're probably familiar with the effect small and large font caches have on the speed of redraw.

● *What anyone can do with RISC OS 3 fonts*

Checking

The first thing you need to do when writing a program is to check the version of the Font manager, and complain with an error message if it is too old. You use the code:

```
SYS "Font_CacheAddr" TO version%
IF version% < 300 THEN ERROR 0,
"Font Manager too old"
```

Fonts are a bit like files – you open and use them, and then close them when you have finished This process helps the font manager maintain the font cache so that it won't throw away a font which is in use when the cache becomes full. To open, or find, a font, you would use code like:

```
fontid$ = "Homerton.Medium"
size = 16
SYS "Font_FindFont",,fontid$,size
*16,size*16,0,0 TO handle%
```

The font identifier (fontid$) is the directory name of the font without the font path. It's probably the name the user sees as well – though under RISC OS 3 it *may* be different. However, the directory name of the font will always work.

Once you have found your font, you need to set its colour. I recommend you use ColourTrans to do this as it simplifies colour selection considerably. The call is:

```
SYS "ColourTrans_SetFontColour",
handle%,fore%,back%,14
```

fore% and *back%* are the foreground and background colours respectively. They are defined as &BBGGRR00 (blue * 16777216 + green * 65536 + red * 256, each colour ranges from 0 to 255). The 14 at the end tells ColourTrans the maximum number of anti-alias colours you want it to use – 14 is the maximum to get the best rendition of text.

If writing a single-tasking program you can set the palette for use with fonts, as the default doesn't allow anti-aliasing in 16-colour or less modes. Use a line like:

```
SYS "Font_SetPalette",,bcol%,fcol%,
offset%,back%,fore%,&65757254
```

The first three parameters specify which logical colours are programmed. *bcol%* is the first one, set to the background colour, and *fcol%* the first of the graduated colours. Both are in the same format as the ColourTrans colour.

The magic number at the end identifies the two colours as true 24-bit colours to maintaincompatibility with future hardware. *offset%* is the number of colours above *fcol%* ➤

➤

to program.

Both *back%* and *fore%* are the colours as in the ColourTrans call. After using this call, use ColourTrans to set a font to use the colours. In 256 colour modes, you must never change the palette, but always use ColourTrans.

After setting the colour, you can then paint the text on to the screen with:

```
text$ = "Hello World!"
SYS "Font_Paint",handle%,text$,
784,x%,y%
```

This paints the text held in *text$* on to the screen at *x%,y%*. The magic number, 784, is the plot type. This particular number tells the font manager that the position is specified in OS units, and to automatically kern the text. It also ensures that other, more complex features are not used. I'll describe some of them later on.

When you have finished with the font, you close, or lose, it with the line:

```
SYS "Font_LoseFont",handle%
```

Example1, on the MegaDisk, demonstrates the use of fonts by painting a few on to the screen and Example 2 shows the different colours of fonts which are available in 256 colour modes. Go into Mode 15 or 21 before running this program.

There a two strategies about when to find and lose fonts. The first is probably the easiest by simply finding it when you want to use it, and lose it directly after the Font_Paint call, but this doesn't allow the font manager to make the most effective use of the font cache.

A better way is to find the font when you first need it, and then lose it when you finally finish with it. However, this strategy complicates the programming, and you have to write error handling routines to lose all the fonts when you get an error and the program terminates.

Listing fonts

If your program allows you to select fonts, you will need to provide a menu of them to choose from. The font manager provides a call to scan the list of available fonts. Under RISC OS 3 it is cached in memory and quick to access but under RISC OS 2 it is read from disk each time it is requested.

The following code will print a list of all the available fonts. You will obviously need to change the *PRINT fontid$* line to one which stores the string somewhere, perhaps in an array. There is no limit to the number of fonts allowed, so make sure your program can cope with large quantities.

```
DIM fontid 256
c% = 0
REPEAT
SYS  Font_ListFonts ,,fontid,c%,256
TO ,fontid$,c%
PRINT fontid$
UNTIL c% = -1
```

The program ListFonts shows this code in action.

If you are writing a multi-tasking program, you will just create a menu structure out of this list – but if you are running under RISC OS 3 the font manager will construct a font menu with submenus for each font, and then decode the menu into a font identifier when a selection is made from it.

The same call, Font_ListFonts, is used. It is called twice, first to find the amount of memory needed, and secondly to create the font menu. It's recommended that you recreate the font menu every time you want to display it – which you will need to do if you want entries to be ticked.

You should create it when the WIMP returns the mouse click to create the window, and then free the memory used when the menu is closed. Message_MenusDeleted (&400C9) is sent to your task whenever a menu you created is closed but not when a menu selection is returned.

```
SYS  Font_ListFonts ,,0,&80000,0,0,
0 TO ,,,font_menu_size%,,font_menu_
indirected_size%
DIM font_menu% font_menu_size%,
font_menu_indirected% font_menu_
indirected_size%
SYS  Font_ListFonts ,,font_menu%,&2
80000,font_menu_size%,font_menu_
indirected%,font_menu_indirected_
size%,font_tick$
```

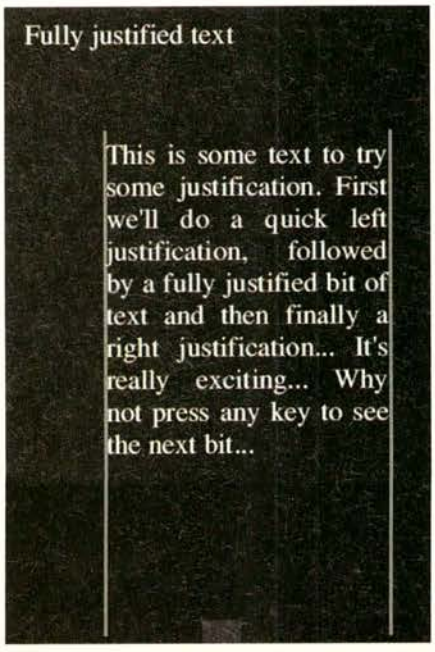
The menu definition is then at *font_menu%*, and this can be passed to Wimp_CreateMenu without further modification. *font_tick$* is the fontid of the font to tick in the menu. If you don't want any font ticked, pass an empty string.

You should replace the DIM statements with another method of allocating memory, for example using a heap as described in the December 1993 issue, otherwise you can't free the memory claimed to create the menu. The memory should be freed when a selection is made or the menu closed.

The font manager also provides a SWI to decode the menu structure it has created when a font is chosen from it. However, it returns a font identifier rather than a font name, and as such contains rather more information than is actually required. To find the name to present to the user, you should use Wimp_DecodeMenu:

```
DIM fontid% 256, fontname% 256
SYS  Font_DecodeMenu ,0,font_menu%,
selection%,fontid%,256 TO ,,,fontid
$
SYS  Wimp_DecodeMenu ,,font_menu%,s
election%,fontname%
fontname$ = $fontname%
```

The DIMs should be performed at initialisation of the program, *selection%* is the menu selection



● *You don't have to worry about justifying the text*

returned by the WIMP, but only for the font menu. For example, if the font menu is a sub-menu off the root menu, you should pass the second word onwards to these two calls.

You should use *fontid$* to find fonts, and *fontname$* to tell the user which font you are using as they could be very different when a machine is being used in non-English speaking countries.

Rotated text

Perhaps the most exciting addition to the new font manager is the ability to display rotated or transformed text. Using a standard transformation matrix and a pair of translation coordinates, it can distort text by changing the axis – either skewing, rotating or doing both to the text. However, the most useful is rotation, and only this is covered here.

For information on other transformations, see any good textbook on matrix mathematics. To paint text at *x%,y%* rotating it by an angle theta (in degrees) anticlockwise, use:

```
DIM matrix% 24
matrix%!0 = COSRAD(theta) * 65536
matrix%!4 = -SINRAD(theta) * 65536

matrix%!8 = SINRAD(theta) * 65536
matrix%!12 = COSRAD(theta) * 65536

matrix%!16 = 0
matrix%!20 = 0
SYS  Font_Paint ,font%,text$,848,
x%,y%,,matrix%
```

matrix% should be dimensioned at initialisation of the program.

Text size

When you are using fonts, you often need to know how big a piece of text is, for example, when centering a piece of text. To find the x and y size of the text in *text$*, use:

```
DIM coords% 64
coords%!0 = 0
coords%!4 = 0
coords%!8 = 0
coords%!12 = 0
coords%!16 = -1
SYS  Font_ScanString ,handle%,text$
,&40320,-1,-1,coords%
SYS  Font_ConverttoOS ,,coords%!28
- coords%!20, coords%!32 - coords%!
24 TO ,x_size%,y_size%
```

The coordinate box is first initialised to ensure that the correct answer is returned and then the length of the string is found. This is returned in the coordinate block as a bounding box, specified in millipoints, and is finally converted to OS units to give the final result in *x_size%* and *y_size%*.

Justification

When you want to print a paragraph of text in a font, the font manager will help by working out where to split the text, and will fully justify it. I'll run through the separate parts of this process. Example 4 shows how to put the bits together.

First, you must place the text into a block of memory so that the font manager can easily work on the text, then find its length.

```
DIM text% 256
$text% = text$
length% = LEN(text$)
```

At the start of the following code, *x%* and *y%* are the coordinates of the top left of the block of text, *width%* is the width of the column and *spacing%* is the size of each line in OS coordinates. In the code, *cy%* is the current y coordinate of the text to be plotted, *split%* is the number of characters to be plotted in the line and *loc%* is the location within the text of the first character of the line.

```
DIM cb% 64
loc% = 0
cy% = y%
REPEAT
cb%!0 = 0
cb%!4 = 0
cb%!8 = 0
cb%!12 = 0
cb%!16 = 32
SYS  Font_Converttopoints ,,width%,
1024 TO ,jx%,jy%
SYS  Font_ScanString ,font%,text%+
loc%,&40320,jx%,jy%,cb% TO ,split%
split% -= text% + loc%
SYS  Font_ConverttoOS ,,cb%!28 - cb
%!20,cb%!32 - cb%!24 TO ,text_x%,
text_y%
REM plot text here
loc%+=split% + 1
cy% += spacing%
UNTIL loc% >= length%
```

The line *REM plot text here* should be replaced by the command to plot the text. The text to be plotted is given by *MID$(text$,loc%+1, split%)*. The size of the text line is given by *text_x%* and *text_y%* in OS units, and using this you can justify it as you require. The simplest form of justification is left justified text. The plot command in this case is:

● *Easy font colour control*

```
SYS  Font_Paint ,font%,MID$(text$,
loc%+1,split%),784,x%,cy%
```

Fully justified text is a little more complex as you have to first move the graphics cursor to the right hand side of the column of text to tell the font manager where the edge of the frame is. You also have to remember not to use fully justified text for the last line of text. The code is:

```
MOVE x%+width%,cy%
IF (loc%+split%+1) <= length% THEN

SYS  Font_Paint ,font%,MID$(text$,
loc%+1,split%),785,x%,cy%
ELSE
SYS  Font_Paint ,font%,MID$(text$,
loc%+1,split%),784,x%,cy%
ENDIF
```

Right justification is quite simple, and just plots the text as in the left justification but indenting it so that the end touches the right hand side of the frame.

```
SYS  Font_Paint ,font%,MID$(text$,
loc%+1,split%),784,x% + width% -
text_x%,cy%
```

You can leave out the Font_ConverttoOS call if you don't need to know how big the text is. Example4 uses the minimum code necessary for each type of justification.

illustration from
Explore with Flossy the Frog

4MATION

Our customers range from professional printers to four year olds. Our products range from the strictly serious to the unashamedly bizarre.

Over the last 11 years we've earned ourselves an enviable reputation for innovation, technical expertise, quality, and a sense of humour.

Whether you're a teacher, a parent, a graphic designer or a four year old, you can find out more about us and our exciting software collection by sending for the latest issue of ***4Mation News***.

4Mation • 14 Castle Park Road • Barnstaple • Devon • EX32 8PA
Tel. 0271 25353 Email: nsouch@cix.compulink.co.uk Fax. 0271 22974

Schneider & Scholz GbR, Reichenberger Straße 8, D-89257 Illertissen, Germany
Tel: (0 73 03) 61 50 Fax: (0 73 03) 23 32

Asylum

A platform shoot-em-up in inner space...

Young Sigmund has a few problems, and in Asylum it's your job to help. Take a look at these features!!!

- **Huge Levels - the game takes place in a maze of lifts and platforms with a total area of over 1000 screens!**
- **Frantic Action - Asylum can handle over 500 moving or animated objects on the screen at once!**
- **So Many Obstacles! - bombs, mines, grenades, flammable gas, electric arcs, exploding lifts, evil potted plants, balls of slime and much more...**
- **Guns and rocket launchers big enough to sort that lot out, but only if you can find them!**
- **Fast and unusual full colour graphics, including huge explosions!!!**
- **Fast Parallax Scrolling - over 2 screens can scroll by every second!**
- **Eight channel stereo sound and music.**
- **Asylum will run on any Acorn RISC OS computer.**

The vast levels combine with terrific gameplay and many hidden features to produce a game of wide and lasting appeal. Asylum just keeps surprising you!

Asylum is ONLY available direct from Digital Psychosis. To order, please send a cheque or postal order for £21 to:

Digital Psychosis
14 Madingley Road, Cambridge CB3 0EE.

4 NEW Collections

The Party, Wedding & Anniversary Clip Art Collection

£14.00 for 2 discs

Military Aircraft £7.95
WW1, WW2 to Jets **Clip Art**

Hand Tools Clip Art £7.95
Woodworking, Decorating, Electrical and Engineering tools and Joints.

Famous Buildings £7.95
Key Stage 2 upwards **Clip Art**

The Impression Resource Disc *Impression Style compatible* £7.95
With over 100 borders, a range of specially drawn clip art and a selection of hints & tips files

The Impression Junior Resource Disc £7.95
As the Impression Resource disc with fully working borders.

The Art Works *Resource Disk* £8.95

The disc includes:
- Function keystrip with undocumented keys
- A ClearView *online* help & hint file
- An illustrated keypress and help chart
- Ready produced moulds
- Difficult to draw shapes
- Decorative clipart

Other Clip Art from more than 60

Sports Equipment	£7.95
Europe Maps	£7.95
World Maps	£7.95
UK and Ireland Maps	£7.95
Home Publisher	£5.95
Church Year Collection	£7.95
Parish Magazine Collection	£16.98

3 discs of clip art, 1 of KJ AV New Testament

Send £1 for the Catalogue/ClearView Demo disc.

Please add VAT at 17.5% & postage to all orders. School orders accepted

DEC_dATA Access VISA

Dep AC3, PO Box 97, Exeter, EX4 4YA Phone Fax 0392 221702

THE DATASTREAM

Dept. AC6, 34 Norbreck Close, Great Sankey, Warrington, Cheshire, WA5

SPECIAL OFFER PACKS

Six discs full of *archived* software for only £4.99.

SPECIAL OFFER NUMBER ONE - DRAW ClipArt **NEW**
High quality archived DRAW ClipArt including cartoons, borders, Chess Pieces, Star Trek, Flags, Dinosaurs, Maps and much, much more.

SPECIAL OFFER NUMBER TWO - Games Pack I
Son of Gyrinus 3.6, Lemings, Invaders (2mb), DinoSaw, Styx (Now works on RISC OS 3), and virtually every 32 bit Tetris game (CTetrs, Tertis etc.)

SPECIAL OFFER NUMBER THREE - Games Pack II **NEW**
Arkanoid, Wizard, PlanetLnd, Snake, Jet Set Willy, HexAtoms, Othello, PlanetWar, MineHunt, Dungeon, NetHack (RPG) and many, many more!

SPECIAL OFFER NUMBER FOUR - Misc ClipArt I **NEW**
Six Discs full of archived ClipArt including animals, cartoons, churches etc.

SPECIAL OFFER NUMBER FIVE - Misc ClipArt II **NEW**
Another Six discs full of archived clip art, from people to herbs, from Stock Cars to the signs of the Zodiac. Nearly 10 meg of clips for less than £5!

FREE!!

Buy anything from this advert and get a free copy of our highly acclaimed catalogue disc featuring over 900 discs of Public Domain software. Alternatively send £1.00 to the address above.

Normal Discs £1.00 **Pic'n'Mix Discs**

Heading off problems

Another selection of your technical posers are solved by Mike Cook

AGENDA

- Printing speeds and results
- Dry joints
- BBC mice
- Fitting new drive heads

Q I HAVE an expanded A310 with ARM 3, RISC OS 3.1, 1Mb of ram and a floppy disk – until the other day when the disk drive broke. Having a look inside the Sony drive I found that the heads were not moving properly and were also slightly out of line.

I realise that I will probably need a new disk drive but as the heads are easily removable do you know if Sony – or anyone else – make heads separately? If I must buy a new drive can I use one of the several PC 1.44Mb drives? These cost around £40 while the only Acorn floppy drive I've seen is 800k and costs £150.

Also how do I copyright my own programs, music and so on. – **Matthew Newton, Stowmarket, Suffolk**

A *It is very difficult to fit a new head to a disk drive even if they were readily available. However, all is not lost. I had the same problem last year and found a company that would repair disk drives – FRC Electronics (0734 479550) – and they offered a quick and economical service.*

The drive came back with a computer generated report on the drive's performance and it has worked well ever since. They replaced the heads and charged £25 and with carriage and VAT the total was just under £40. I considered this much better than getting a low quality PC drive as a replacement and for people in the Reading area they can save on the postage.

As to your second point everything you write is initially copyright to you unless someone else is employing you to write it. There is no need to send it anywhere or register it with anyone. You can always reinforce your claim by adding a copyright notice to your work or – as in the case of some software – you can relinquish it and make it public domain.

Incidentally if you add any conditions to this – like "the software must not be sold for profit" – it ceases to be PD and you retain copyright which means that most so-called PD software isn't. If you're really worried that someone will steal your creation you can lodge a copy with your bank as proof of its existence and your ownership at a given moment in time.

Rodent news

Q I HAVE got Quest Paint and ConQuest for my old BBC B and was wondering how to use the mouse in one of my Basic programs.

The manual for Quest Paint has a section *Reading the Mouse from Basic* where it says that the mouse driver code must first be enabled by typing *MOUSEON. This was simple enough but it goes on to say issue an OSWORD call, with the accumulator set to 64 and the X and Y registers pointing to a parameter block and that it will result with the following:

```
A=64
X & Y point to parameter block
CALL &FFF1
```

Returns:

```
XY + 0 LSB of X coordinate
XY + 1 MSB of X coordinate
XY + 2 LSB of Y coordinate
XY + 3 MSB of Y coordinate
XY + 4 Text X position
XY + 5 Text Y position
XY + 6 Mouse button status
```

The mouse button status byte is RML00000, where R is the right button, M the middle and L the left ➤

Speed and resolution

Q I HAVE just bought a Star LC-200 colour printer to go with my A3000. I am pleased with its speed and colour by comparison to my previous mono printer, but I am disappointed that it appears to have no facility for printing colour at resolutions above 120x72.

I am using the printer driver supplied with RISC OS 3.1. If I got another driver would this problem be overcome or is this the highest resolution possible with this model when printing in colour?

I can print in mono to a resolution of 240x216 with very professional results. I would have thought that if I can get high resolution mono I should be able to get high resolution colour too.

My other question is how can I buffer printing from Impression Junior? I have tried *Configure PrinterBufferSize 64k but this does not seem to work, but instead gives a 64k buffer that the program does not seem to see. – **A.J. Williams, Chudleigh, Newton Abbot**

A *The problem here is that although the printer can be run in different resolution modes it is really only producing one fixed resolution. Let me explain; the print head mechanism will produce dots of a fixed size and nothing can change this.*

However, the software inside the printer might choose to print these dots so close together that they overlap. This can look quite good, especially on characters and graphics consisting of straight edges, but not if you are attempting to produce a grey scale or shades of colours.

When you are doing this you need to have the dots separate and not overlapping. If they do overlap the results are dark, muddy and very unsatisfactory. In order to prevent that there is no provision for so-called high resolution output using colour.

When a manufacturer advertises a printer – or in fact anything – he wants to describe it using the best possible numbers. That's why resolution figures can be so misleading.

For example, there is a trend to advertise laser printers as having 600dpi (dots per inch) when really it is just a 300dpi mechanism with overlapping dots.

If you want to speed up your printing from Impression Junior you'll need to change your printer driver to one of Computer Concepts TurboDrivers. With this you can speed up the rendering time – the time taken to draw the picture in the system sprite memory. By making a 64k printer buffer you have created less memory for the printer driver to render the image so you are slowing down, not speeding up, the printing.

➤

button. If the corresponding bit is a 1 the button is up and if it is a 0 the button is down.

Could you tell me how I can read the mouse from Basic and get the X and Y co-ordinates of the mouse position in graphics modes, and if possible in text modes, and also what the button status is? – **Simon Wilson, Wellingborough, Northamptonshire**

A *A parameter block is simply an area of memory where you are going to store the results, so you first need to define a space especially for this. This use of the DIM statement at the start of the program will do this for you so use something like:*

```
DIM SP%8
```

Note that there are no brackets here, this reserves 8 bytes of memory at an address returned by the variable SP%.

To read the values you have to get the processors X and Y registers to point to this address space. When you have made a machine code call the registers are set up with the values of the variables A%, X% and Y%.

So Y% has to contain the least eight significant bits of the address of your reserved space with X% containing the most significant bits. This is done by:

```
Y% = SP% AND 255
X% = SP% DIV 256
```

Now you have to set up the accumulator and call the routine:

```
A% = 64
CALL &FFF1
```

This places the results in the space you want. Now you have to extract them from this space by using the indirection operator pling. This gets four memory bytes and places them in a variable.

However, as you have the X coordinate stored in only two bytes you have to mask off the top two bytes. So get X and Y mouse position by using:

```
MX% = SP%!0 AND &FFFF
MY% = SP%!2 AND &FFFF
```

The button status is a binary number formed by the three buttons. You can obtain it by using:

```
S% = SP%?6
```

Now if this is equal to seven none of the buttons are pressed. If the right button is down one will be subtracted from this number. If the middle is down two is subtracted and finally if the left button is down then four is subtracted. Note that this can show you any combination of buttons being held down.

You can write to Mike Cook c/o Acorn Computing, Europa House, Adlington Park, Macclesfield SK10 4NP.

He will answer any questions about difficulties you may be having with your machines, mainly those to do with hardware. If you want a personal reply ensure that you enclose an SAE with your letter.

Loose ram

Q IN THE December issue you published a letter from Chris James of Ticknall, Derby who had upgraded his 420/1 to a 4Mb and began to experience intermittent problems. I had exactly the same problem with my machine.

I had mine upgraded when I bought it and suffered over a year of problems. It went back to the supplier three times and came back with the response that they could find no problem or had solved it. This included replacing the extra 2Mb with new ram chips. It was only when I took the machine gingerly to a local Acorn dealer that I was able to show the fault in action.

Acorn then extended my guarantee and the machine was sent for a thorough inspection. My local dealer had said that he thought there was a loose ram socket in the area where the additional 2Mb of ram was inserted and that the bumping around to and from the supplier by courier could have hidden the problem.

Granada took out all the ram sockets, soldered them in and then soldered in all the ram. I have had no problems since.

In return, can you help with the following query. My 420/10 is upgraded to 4Mb with RISC OS 3.1 and ARM2. I run in Mode 102 using Ovation and Eureka 2 in the office on a continuous basis. I find the system can be quite slow and I sometimes cannot print spreadsheets for lack of memory.

I have a HiRes LPB8 laser printer but very seldom can I use 600dpi. I have only so much cash to spend on a upgrade. Should I go for extra memory, an ARM3 or a graphics card?

I believe the graphics cards could give me extra speed and help over the memory. Is this correct? – **John Waddell, Langbank, Renfrewshire**

A *Thanks for your help. And I would like to emphasise that removing and re-soldering sockets is definitely a job for skilled engineers only. You can do a lot of damage if you attack a board with too large an iron and too high a confidence level.*

As to your problem, if it were me the order of priority I would choose would be more memory, ARM3 processor and then a graphics card. The reason is that memory is stopping you from doing something therefore expenditure on that will give you more functionality. Speed is nice to have but life is not that short that an extra few minutes will be vital.

Next the ARM3 processor will give you extra speed especially where heavy loading graphics modes are involved. Finally the graphics card, although producing impressive results, has a limited amount of software that can take advantage of it – although the latest Computer Concepts card has modified software so you can have all the colours on the desktop.

This is my personal opinion and others are free to disagree.

Monitoring the problem

Q I WRITE with what I hope is some more useful information for Peter MacDonald from Wincanton who was having problems with his AKF11 Monitor.

His problem sounds very similar to mine and a common fault with the AKF11 if the discussions on the Acorn newsgroups of Usenet are anything to go by.

I asked a friend who is an electrical engineer to help me try and trace the fault. When we removed the cover I have to say that neither of us was very impressed with the quality of the flow soldering on the circuit boards.

Due to this these monitors are susceptible to dry joints after some time and this is where the solder joint breaks down. The give-away sign is that the monitor makes a high-pitched noise when the screen is working, which disappears when it goes blank only to return when the screen starts working again.

I too, like Mr MacDonald, found a good shake or a thump on the side got the monitor working.

The most likely place for the dry joint is the power supply board which is where the HT lead from the tube is connected. Due to the high voltages involved you should only try this repair if you are competent to do so. Alternatively, anyone with experience of repairing TVs should be able to carry out this job.

Since I re-soldered some joints on my monitor about four months ago, it has worked fine and the annoying high-pitched whine has gone. – **Justin Ayres, Ilford, Essex**

A *Thanks for your help with the monitor. It is always informative to know about common faults on Acorn equipment. As I am an electronics engineer as opposed to a service engineer I often have to work out these problems from first principles.*

What can be an obscure theoretical fault can often have a simple cause like this one.

Showroom open Mon-Sat 10-18.00 hrs (All prices exclude VAT)

TopicArt

A new form of clip art comprising of single discs containing approximately 50 hand drawn high quality draw format clip art images, each on a single subject. Site and area licences are available, please ring for details.

TopicArt9 - Dinosaurs

Subjects available
1 - General
2 - Transport
3 - Costumes
4 - Entertainment
5 - Bugs 2 Slugs
6 - Road Signs
7 - Sports Equip
8 - Sports Figures
9 - Dinosaurs
10 - Symbols
11 - Tools
12 - AnimalsGB

£8 + VAT per disc

12 TopicArt subjects are available now. Please specify when ordering.

Buy 4 TopicArt discs get one free
not incl SpecialArt

TopicArt12 - AnimalsGB

TopicArt4 Entertainment

SpecialArt (Xmas or Signs) £20+VAT (each)

Special editions of TopicArt consisting of a minimum of 4 discs full of clipart

RISCOS 3.1 A300(Complt.) £97.88
RISCOS 3.1 A3000-A540 £75.75
Add £4 + VAT Carriage to above

DIY Ink Jet Refills

Why throw away empty inkjet cartridges... ...when you can refill them at a fraction of the cost

Colours available include
Cyan, Magenta, Yellow, Black, Red, Green, Blue, Brown

Single Refills (req an orig cartr.)	£7
Twin Refills (req an orig cartr.)	£12
Please specify colour(s) required	
125ml Cleaning Kit	£4
400ml Cleaning Kit	£10
ColourSep software	£15

Suitable for DeskJets, BJ's, JP's + others

QuickTile v1.01 £25+VAT

Up until now it has only been possible to print posters from Draw & Sprite files. Now with QuickTile you can create posters from ANY RISCOS application, including Impression. Simply enter the size of poster required & select PRINT from the application! QuickTile does the rest, printing each tile with crop marks and tile references.

Requires RISCOS 3.10 or later.
Send v1.00 disc back for free upgrade.

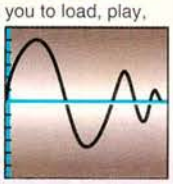
QuickShow £25+VAT

!QuickShow
Video Titling
&
Slide Show Presentation
Has never been easier!

QuickShow is an easy to use slide show presentation and video titling package. It allows you to create a sequence of frames containing text of any colour with drop shadows, outline shadows and rubout boxes using outline fonts. Sprites can also be included in frames and positioned and resized as necessary. Once several screens have been created they can be linked together with the sequencer which allows you to fade each screen out and in with the many fades provided with the package. Completed sequences can be converted to a stand alone application which when run, automatically 'Shows' the sequence without using !QuickShow. 2Mb RAM required.

QuickSnd £10+VAT

QuickS(ou)nd allows you to load, play, convert & resave existing samples. Armadeus, Tracker, raw data formats are supported. Samples can also be converted into modules for use with other sound systems



Showroom

Come and visit our showroom, most Acorn systems and software on demonstration. Open Mon-Sat 10.00 to 18.00 hours.

Hardware, Software & Books (All prices exclude VAT)

Pocket Book/Psion

Acorn Pocket Book	£159
Psion 3 256k	£175
A-Link for either of the above	£51

A3010 Series

Action Pack	£339
TV output, 1Mb RAM, FD, Zool, WP	
Learning Curve System	£637
2Mb RAM, Monitor, Advance, PCE	

A3020 Series

Floppy Disc System	£675
As above less Lng Crv & joystick prts	
60Mb Hard disc System	£825
As above with 60Mb Hard disc	

Add £43 for AKF52 MultiScan Mon.
Add £107 for AKF50 0.28dp Monitor

A4000 Series

A4000 2MHD80 Syst	£850

2Mb RAM, Floppy Drive, 80Mb hard disc, std mon, EasiWriter2, database.

Add £43 for AKF52 MultiScan Mon.
Add £107 for AKF50 0.28dp Monitor
For 1Mb 386 PC card add £250
For 4Mb 486 PC Card add £450

A5000 Series

A5000 2MHD80 Sys	£1275
A5000 4MHD160 Sys	£1445

Add £200 for Microvitec CubScan
Add £64 for AKF50 0.28dp Monitor

Learning Curve

Learning Curve Software Pack £42

This pack can be purchased with any of the above computer systems (excl. A3010) & includes Advance, PC Emulator & many demos of popular games & applics. Not avail seperately.

Home Office

Home Office Pack £85

This pack can be purchased with any of the above computer systems (excl A3010) & includes EasiWriter2, DataPower, PipeDream4, PC Emulator, & many demos of popular games & applics. Not avail seperately.

Acorn A4 Series

Free Sh. Bag, Sp. Batt,PCE

A4 4MHD Portable	£1699

Monitors

Acorn Standard/MultiScan	£210/£259
Microvitec Cub Scan 1440	**£389**

0.28dp, 40 presets & 3yr Warranty

Hardware Upgrades

ARM3 (25MHz, Inc FPA socket)	£159
Canon BJ TurboDriver (CC)	**£42**
Joystick Interface (all m/c's)	**£28**
Midi Expansion Card	£65
Scanlight 256	£199
ScanLight Professional	£549
Vision Digitiser Colour Int	£76/Ext £89

RAM Upgrades

A3000 Up to 2 / 4Mb RAM	£55/£129
A3010 Up to 2Mb / 4Mb	£45/£149
A3020/A4000 Up to 4Mb	£89
A5000 Up to 4Mb	£89
A5000 Up to 8Mb RAM	£349
A400 RAM	£35 per Mb

Hard Discs/MagOpt

The following are complete systems.

IDE Archimedes Internal	
80Mb 16ms Cache	£180
250Mb 13ms Cache	£295
IDE A5000 2nd Internal Drive	
250Mb 13ms Cache	£240
IDE Archi/A3000 External	
80Mb 16ms Cache	£250
250Mb 13ms Cache	£385
HCCS HD Multi-Pod	**A3000/A3010**
20Mb + User Port	£229/£222
80Mb + User Port	£349/£339
SCSI Archimedes Internal	
120Mb 18ms Cache	£319
200Mb 18ms Cache	£409
520Mb 12ms Cache	£Call

For external add £80

SCSI 128Mb Magneto Optical Drive	
128Mb Internal Mag-Opt Drive	£599
External case for above	£69
128Mb Mag-Opt Blank Discs	£35
SCSI CD-ROM Drives (Excl Card)	
Ext Toshiba caddy loading	£399
CD-ROM 330kb/s with 200ms access	
Ext Toshiba tray loader 350ms	£319

Printer Consumables

BJ-10/BJ-200 Ink Cartridge	£18/£19
BJ-300 Ink Cartridge	£14
BJ-600 Black/Colour Cartr.	£7/£8
BJ-800 Black/Colour Cartr.	£18/£21
DeskJet500 Mono/Col Cartr.	£23/£24
Swift24 Mono/Col Ribbon ea.	£7/£15

Printers (Inc Cable)

Canon BJ-10sx / Turbo	£175/£210
Canon BJ-10 Sheet Feeder	£50
Canon BJ-200 / Turbo	**£250/£285**
Canon BJ-230 / Turbo	£300/£335
Canon BJC-600 Turbo	**£509**

Simply the best A4, 4 Colour Ink Jet Printer available today!

Canon BJC-800 Turbo	£1299
HP DeskJet 500C Colour	£299
HP LaserJet 4 (600dpi)	£Call
Laser Direct HiRes4 (free Imp II)	£799

Books (No VAT)

A540/A5000 Tech Guide (ea)	£65.00
Acorn BBC Basic Guide	£19.95
Acorn RISCOS3 PRM's	**£99.00**

Add £7+VAT carriage for PRM's

Acorn 1st Word+ Manual	£10.00
Acorn AASM Manual	£25.00
Acorn ANSI C v4 Manual	£25.00
Archi Game Maker's Manual	**£14.95**
Begin's Guide to WIMP Prog	**£12.95**
Dabs Archi Assembly Lang	£14.95
Dabs Archi First Steps	£9.95
Dabs Archi Operating System	£14.95
Dabs Mastering 1st Word+	£13.95
DTP on the Archimedes	**£12.95**

Add £1+VAT Carr. to above books

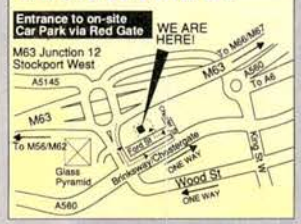
First Impressions (inc discs)	**£35.00**
Good Impressions (inc discs)	**£30.00**

Terms EC residents add 17.5%

VAT to all prices except books.

Carriage free in UK (except books, RISCOS3.1), elsewhere at cost. Orders MUST be accompanied by a phone number. Prices and spec's subject to change without notification. Goods subject to availability. Goods not offered on trial basis. Restocking fee on non-faulty returns. Official orders welcome, chq with order < £50.

Where to Find Us



Application Software

Advance (Acorn)	**£95**
Almanac3 (Stallion)	**£67**
ArcTerm 7 (Serial Port)	£62
Art Works (CC)	**£129**

With Free TopicArt disc

AudioWorks (CC)	**£49**
Chameleon 2 (4mation)	£35
Compression (CC)	£35
Desktop C v4 (Acorn)	£180
Desktop Thesaurus (RISC Dev)	£19
Digital Symphony (Oregan)	£41
Eureka v2 (Longman)	£99
Font FX (DataStore)	£10
Hatchback (4mation)	**£35**
Home Accounts (Minerva)	£34
Illusionist (Clares)	£79
Image Animator (IOTA)	**£59**
Impression II (free u/g to Publ)	**£125**
Impression Publisher (CC)	**£135**
Impression Style (CC)	**£95**

Free TopicArt disc with Impression

Investigator 3 (Vertical Twist)	**£47**
Magpie (Longman)	£49
MasterFile III (RISC)	£47
Morpheus (Oregan)	£28
Night Sky (Clares)	**£67**
Notate (Longman)	£54
PenDown Plus (Longman)	£68
Pin Point Junior (Longman)	£23
PipeDream 4 (Colton)	£119
PlayBack (RISC)	£17
Poster (4Mation)	£75
ProArtisan 2 (Clares)	£109
Render Bender v2 (Clares)	£99
Resultz (Colton)	**£119**
Revelation II (Longman)	£110
Rhapsody v2 / v3 (Clares)	£49 / £79
S-Base Personal (Longman)	**£120**
Serenade (Clares)	£109
Sleuth (RISC Dev)	**£47**
Snippet (4Mation)	£35
Squirrel 2 Database (Dig Ser)	**£130**
Superior Speech!	£15
Titler (Clares)	£119
TurboDrivers BJ or HP (CC) ea.	**£42**
TypeStudio (Beebug)	£43
Vector (4Mation)	£75
Worra CAD (Oak)	£83
WordWorks (CC)	**£39**
Wordz (Colton)	£95

Games Software

Alderbaran (Evolution)	£26
Axis (TBA Software)	£19
BattleChess (Krisalis)	£22
Birds of War (4D) 2Mb	**£25**

Games Software (Contd)

Black Angel (4D)	£25
Break 147 & Superpool (4D)	£25
Carnage Inc (4D)	**£18**
Champions (Krisalis)	£22
Chocks 2 Compendium (4D)	£25
Chopper Force (4D)	£25
Chuck Rock (Krisalis)	£19
The Crystal Maze (Sherston)	**£33**
Cyber Chess (4D)	£25
Demon's Lair (4D)	£18
Dreadnoughts (Turcan)	£26
Dungeon (4D) 2Mb	£25
Elite (Hybrid)	£32
Enter the Realm (4D) **2Mb**	£18
Exotic Adv of Sylvia Lane (4D)	**£18**
Fun School 2/3/4 ea. (5, 5-7, >7)	£18
Games Wizard 2 (Gamesware)	**£19**
GODS (Krisalis)	£19
Granny's Garden (4mation)	**£23**
Guile (Dream)	£22
Haunted House (4D) 2Mb	**£18**
Heimdall (Krisalis) 2Mb	**£22**
Hero Quest (Krisalis)	£22
Ixion (Software 42)	£19
James Pond (Krisalis)	£19
James Pond 2 RoboCod (G/W)	**£20**
Krisalis Collection	£22
Lemmings (Krisalis)	£19
Lemmings 2 Tribes (Kris) 2Mb	**£24**
Lotus Turbo Chall 2 (Krisalis)	£19
Magic Pockets (Renegade)	**£21**
Manchester Utd Europe (Krisalis)	£19
Noddy's Playtime (J/Bean) 2Mb	£20
Oh No More Lemmings (Kris)	£16
Omar Sharif's Bridge (Krisalis)	£22
Pandora's Box (4D)	£18
Populous (Krisalis)	£22
Powermonger (Krisalis)	**£22**
Quark (Oregan)	**£19**
Real McCoy 2/3/4 each (4D)	£25
Repton 4 (Superior)	£18
Saloon Cars Deluxe (4D)	£25
Sensible Soccer (Renegade)	**£21**
Sim City (Krisalis)	£22
Simon the Sorcerer (G/W) 2Mb	**£32**
Small (Virgo)	**£18**
Spheres of Chaos (Matt Black)	£19
Stunt Racer 2000 (4D)	**£25**
SWIV (Krisalis)	£10
10/10 Early Essentials <7yr	£19
10/10 English 6-16yrs	£19
10/10 Maths (Number) 6-16yrs	£19
10/10 Maths (Algebra) 6-16yrs	**£19**
Virtual Golf (4D) **2Mb**	£25
Xenon 2 (Gamesware)	£22
Zool (Gremlin)	£19

Desktop Projects Ltd

Tel: 061-474 0778

Authorised Acorn Dealer (Fax No. 061 474 0781) E & OE
Unit 2A, Heapriding Business Park, Ford St, **Stockport.** Ches.SK3 0BT

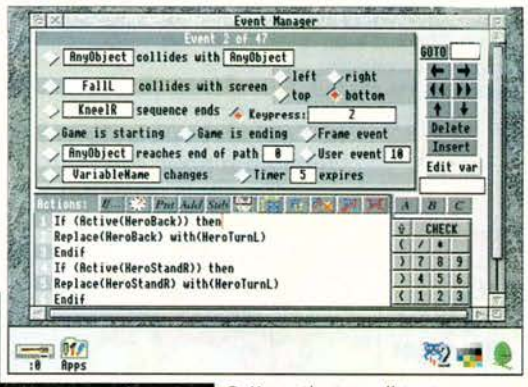
Access VISA SWITCH

Registered Squirrel Dealer

MAR 94

Creator II

...the programmers' dream?



● *The event handler – the backbone of any game*

● *Keep that scroll text simple for best effect*

GETTING a computer to do something is quite easy. Persuading it to do what you want it to do is somewhat harder. Writing a game – well, that's another matter altogether. There's nothing quite like watching a scroll text bury its way through the screen into sensitive areas of memory or wondering where the large, beautifully-detailed mothership has got to.

To ease the burdens of would-be games programmers, Alpine have upgraded their original Arcade Games Creator package and released Creator II. Its job is to take responsibility for the technical scaffolding that props up a game and allow the author to concentrate on gameplay, graphics and music.

Creator is now supplied on three disks, two of which are filled with music, sound effects and example games. The best performance would be achieved on a hard disk system with lashings of memory, but once the program had been set up it ran smoothly from a high density floppy, avoiding any maddening disk-swapping sessions.

As with most things in life, there are advantages and disadvantages – Creator makes it simple to lay down the framework for a game but it does place restrictions on the directions you can take. Its style is well suited for shoot-'em-ups or platformers, but it would be an arduous task to code say, a three-dimensional maze game.

Creator II is easier to use than its predecessor. A program is supplied to create the basic game shell and you can get down to the business of coding straight away as Creator is quicker when refreshing the screen. However, there is still a language of sorts to learn, so be prepared to study the manual.

The heart of the program is the event handler – this is a routine that takes the raw mechanisms hidden away in the game and translates them into a format that is easier to understand.

For instance, if your character had walked over a diamond and you wanted to pick it up, instead of having to worry about their respective positions on the screen, you would just tell the computer to call the appropriate routine when that collision occurred.

Due to this feature, the programmer does not have to continually check the states of objects – the computer will carry out the responses by itself.

There have been some useful additions to Creator since the previous version, including a scroll text utility, tiled backgrounds and a method of simplifying references to multiple objects that behave in the same way, such as bullets.

The tiled backgrounds allow large platform or maze games to be developed easily, and this is probably the simplest game to start from as it is covered in the manual's tutorial with detailed files supplied on the disks.

The scroll text routine produces satisfactory results but can be difficult to control – and if my experiences are anything to go by, it pays to keep things simple.

It is important to remember that although Creator II will effectively take care of the technical side of producing a game, several areas remain – graphics, music and gameplay. Unless equal care is taken with each, the quality of your game will suffer as a result.

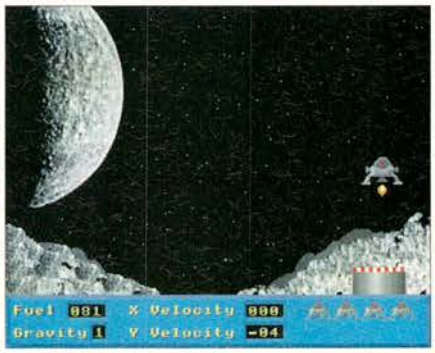
Sadly, games written with Creator are unlikely to be as smooth or as fast as those written in pure machine code, but the results can be very pleasing all the same.

If the idea of coding is the only factor holding you back from writing a game, then Creator II could be your missing link. If you plan out your game carefully and follow the numerous tips given in the manual, you should end up with a result you can be proud of.

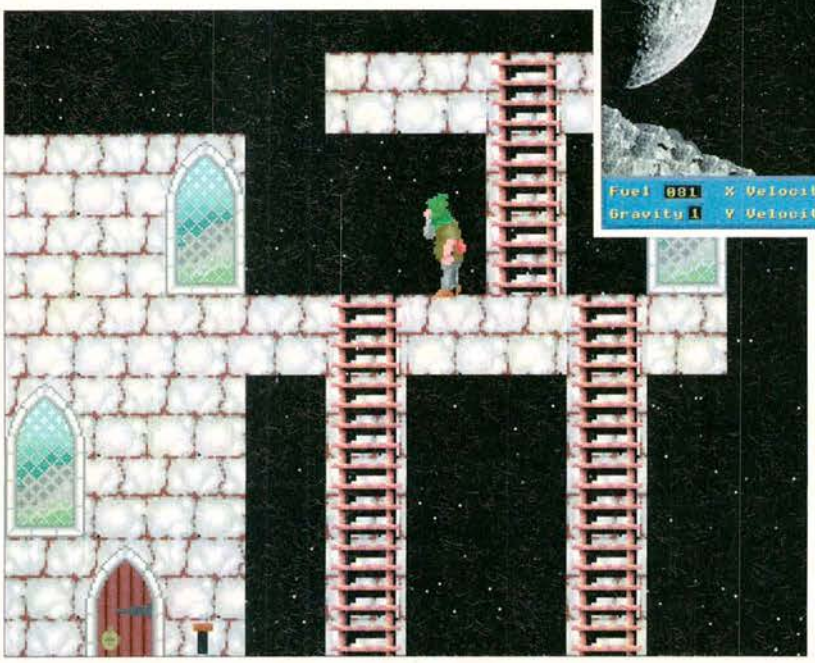
Hal

PRODUCT SPOTLIGHT

Price: £49
Supplier: Alpine Software, PO Box 25, Portadown, Craigavan BT63 5UT.
Tel: 0762 342510



● *Easy does it...*



● *It's simple to produce platform games with Creator II*

Sensible Soccer

...a game of two halves

I WANT to make it absolutely clear from the outset that I've been to one match in my entire life and I don't like football – but I *love* Sensible Soccer. It's brilliant. From start to finish it smacks of professionalism with extreme attention to detail, the graphics are excellent, the music superb and, unlike just about every other soccer game I've ever tried, with this one you really feel you're playing.

Need I say more? Well, I have to so let's see what you get: In the box you get the manual (in four languages) which includes a simple description of the rules, a correction sheet and an Archimedes addendum sheet.

Any number can play – although only two players at a time take part in a match. It comes on two disks and you can run it from floppy or install it on your hard disk, it uses key disk protection so you need disk one handy to play.

You can play a league and select the number of teams you want, number of times they play each other, which ones are computer-controlled and which are run by humans – then away you go. League positions can be saved and reloaded later.

Or you can play in a knockout cup and select teams as before plus the number of legs in each round. There are also some preset cup and league competitions which you can select such as Cup Winners Cup, UEFA Cup, European Superleague and so on.

When you first run it you get a selection of National teams but you can switch to Club teams if you prefer. The team files can be edited so you can create your own selection, change the players within a team or invent your own custom teams. You can also edit the team colours for both home and away matches as well as their hair colour and complexion.

So much for the peripheral aspects, what about playing the game? The first point to note is that you can set a match to last three, five, seven or ten real minutes although all information is provided as if a full 90 minutes is being played out.

When the match starts the players all jog on and take up their positions on the field and the whistle blows for kick-off. The number of the player you're controlling appears over his head, the others are computer-controlled and play sensibly.

Players move in eight directions, the fire button (or equivalent key) is used – off the ball – for headers and sliding tackles depending on where the ball is in relation to the player.

If you have possession a tap on fire passes the ball to the nearest player on your team who is in an appropriate position – assuming there is one – otherwise the ball is booted straight ahead.

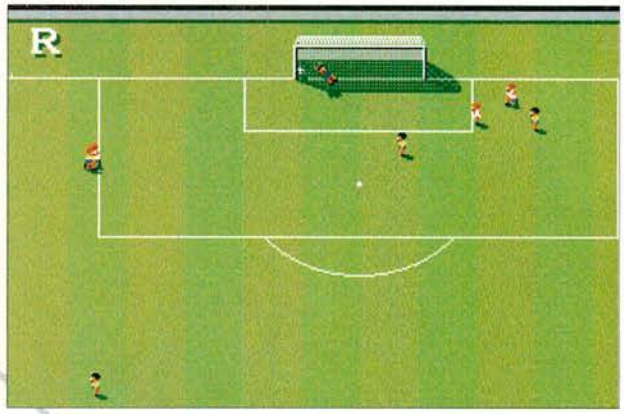
This is where the skill comes in because if you can master the knack – and I'm beginning to get it – changing the direction of the player after the kick causes the ball to swing in the appropriate direction. This takes practice but it's essential if you want to win.

Sliding tackles into players' legs works, but the Referee always sees and you're likely to get your player the yellow card or even sent off. All normal rules apply except there's no offside. Drawn games can result in penalty shoot-outs.

The final part of Sensible Soccer that really adds to the atmosphere is the crowd noises, including chants – it's amazing. The polish of this program extends to the crowd starting to boo when the ball is kicked out of play for the second time in quick succession.

I have no hesitation in recommending this game even if you don't like football – after all, the team that scores the most goals wins, unless they're 3-0 down on aggregate.

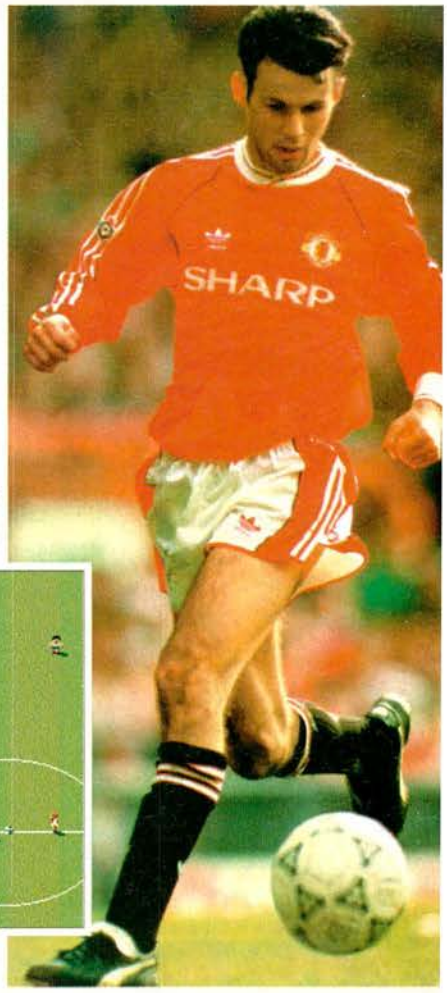
Steve Turnbull



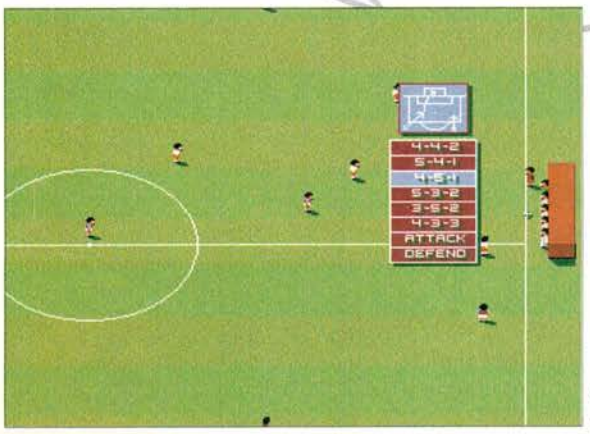
● *It's a goal!*

PRODUCT SPOTLIGHT

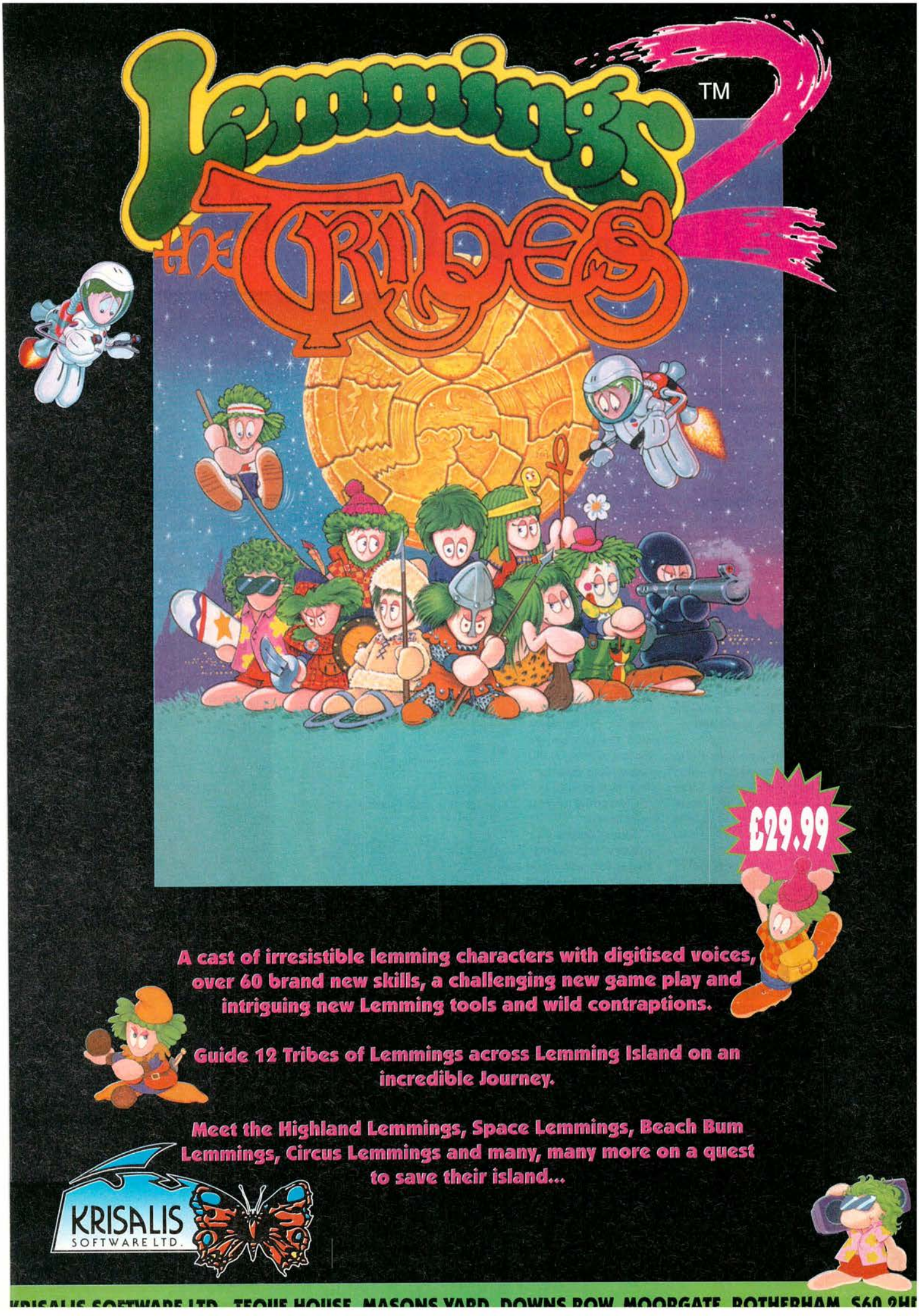
Price: £25.99
Supplier: Renegade, Unit C1, Metropolitan Wharf, Wapping Wall, London E1 9SS.
Tel: 071-481 9214
Requirements: 2Mb (works in 1Mb with fewer functions)



● *Bring on the sub and let's see some action*



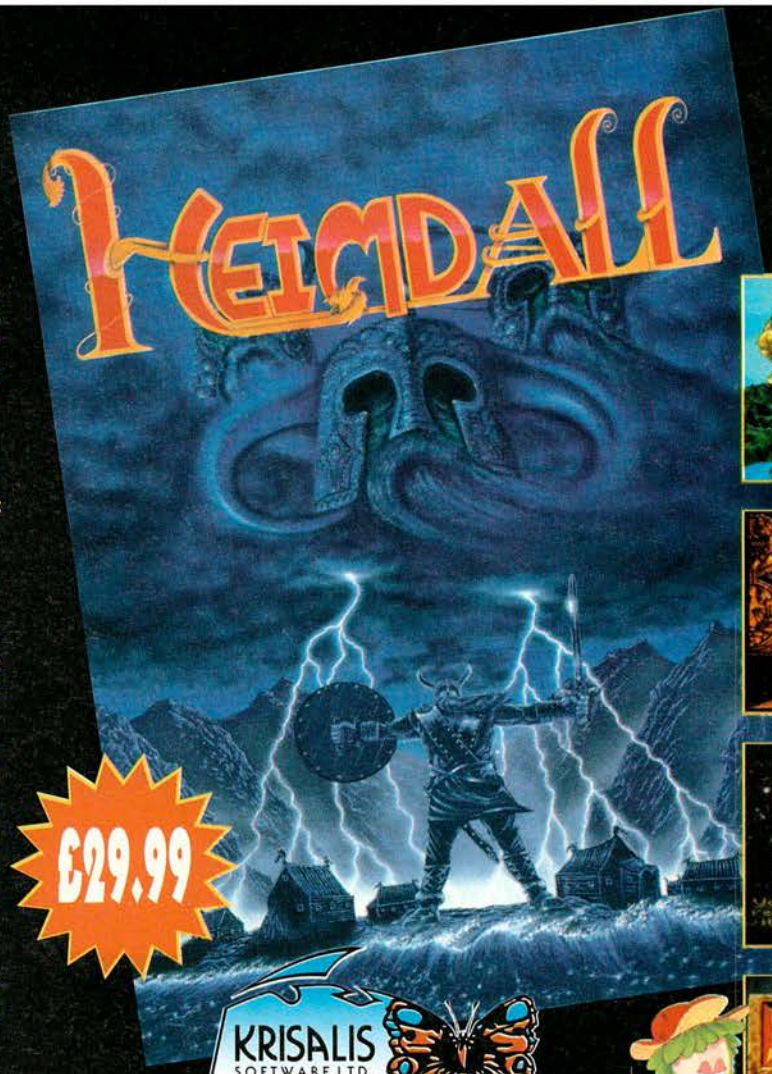
● *Time to rethink our strategy*


Lemmings 2™
the Tribes
£29.99
A cast of irresistible lemming characters with digitised voices, over 60 brand new skills, a challenging new game play and intriguing new Lemming tools and wild contraptions.
Guide 12 Tribes of Lemmings across Lemming Island on an incredible Journey.
Meet the Highland Lemmings, Space Lemmings, Beach Bum Lemmings, Circus Lemmings and many, many more on a quest to save their island...
KRISALIS SOFTWARE LTD.
KRISALIS SOFTWARE LTD. TEQUE HOUSE, MASONS YARD, DOWNS ROW, MOORGATE, ROTHERHAM, S60 2HE

Norse legend tells of a time when the Gods of Valhalla and Asgard created a race known as the Vikings. At first the Gods loved their children and contact between the two was frequent. As time passed the Gods lost interest in their creations and visits across the Rainbow Bridge ceased.

Frey, one of the oldest and wisest Gods, foresaw that they would one day have need of the Vikings so he visited the leader and told him that in centuries time a great warrior would be born amongst them to lead his people in a mission of great importance, representing the Vikings at the Battle of Ragnarok.

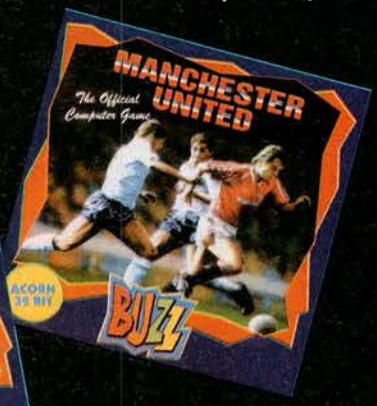
The warrior that legend speaks of will be known as...HEIMDALL



£29.99

KRISALIS SOFTWARE LTD.

CATCH THESE CLASSIC TITLES AT £9.99



BUZZ

HOW TO ORDER

LETTER/FAX
Simply send a letter giving details of the game(s) you would like, your name and address, and payment by cheque, postal order, or by giving your access of visa card details including the expiry date.

IMMEDIATE DISPATCH
All orders are dispatched by first class post immediately. Carriage is paid by us in the U.K. (orders from overseas add £3 per product).

FULLY GUARANTEED
If for any reason disks supplied by us become faulty we will replace them straight away simply return them to us enclosing your name and address.

Access

VISA

ACCESS & VISA ACCEPTED

TEL: 0709 372290 FAX: 0709 368403

Heimdall

...working for the gods

HEIMDALL has been some time in making it on to the shelves but has the wait been worthwhile?

To set the scene – which the beautifully drawn introductory screens do very well indeed – you are the prodigy of the Viking pantheon and it is your life's task to recover the weapons evilly stolen and hidden by the maverick Loki.

Okay so those knowledgeable about Norse legend may throw up their hands in horror, but come on guys it's just a game...

This is essentially a role-playing game – RPG to the initiated – and you have a choice of team members with varying skills in magic/lore or specialising in the more physical attributes of heroes of legend.

Heimdall is the leader and a good all-rounder but he must choose five companions. This is done by playing the attributes section, the better you do the better your choice of men at arms.

This stage consists of three sub-games. The first – which may look familiar as it was on a previous *Acorn Computing* subscription disk – has you chucking axes at a poor unfortunate lass who has her pigtails pinned to a board. Don't hit the girl, it's considered bad form.

Next you must catch a pig within a time limit, but he does insist on running around in the mud. The last attribute game consists of jumping along a longboat and hitting opponents while avoiding being hit yourself.

You can now choose between the crew members at your disposal. A word of advice here, you can only have two people accompanying you to the island and they are the first two you choose. Compare their attributes before you decide and set the order so you have all areas well covered.

All the characters start off with basic equipment and food – which replenishes lost energy better than level one cure spells. The interface is quite straightforward to use but explore a bit before you cast off in your longboat for a bit of island hopping.

The map shows all the islands you can visit. You can go where you want as you don't have to disembark at one island before continuing your journey to another. This is where paper and pen come into play as each island may hold its solution in itself but it's more likely that you'll need something from another island to help.

What can you expect to find on these northern outcrops? Well the usual: Guards with bad attitudes, traps, pits, secret doors and some nasty monsters for which you'll need extra strength, swords or axes and scrolls and runes to help with some of the problem solving and fighting.

The fight screens are a little cumbersome until you find the right rhythm. Also, be careful which weapons you give away or leave on the boat. For maximum effect you want your main weapon third on your weapons inventory – then it's not so far to move the mouse.

Does this smack of desperation? Well, when fighting on some islands it most definitely is, especially as you can only save when on the boat – plus you can only have one saved position too. I didn't like this so resorted to a little program which I'll be passing on to Hal for his column.

I did get a bit irritated by the map screen. You choose to sail and are told every time to click on an island, but you can only do that after you have closed the message window.

In addition the load and save options are on the character display screen but they'd be more appropriate on the map screen. The movement controls are a little awkward too but I soon got the feel for them.

The puzzles are nicely set and it was with relief I found the shop so I could sell my hard earned geld and restock on food, spells and the like.

This is a game to explore and one in which to remember that discretion is sometimes the better part of valour – I mean how are you going to explain to the rest of the crew that you lost Heimdall to a spider?

I thoroughly enjoyed Heimdall, though it isn't perfect, but being a lover of this type of game it was worth the wait as it's well crafted as well as frustrating, annoying and addictive. If only I could work out what to do next ...

Pam Turnbull

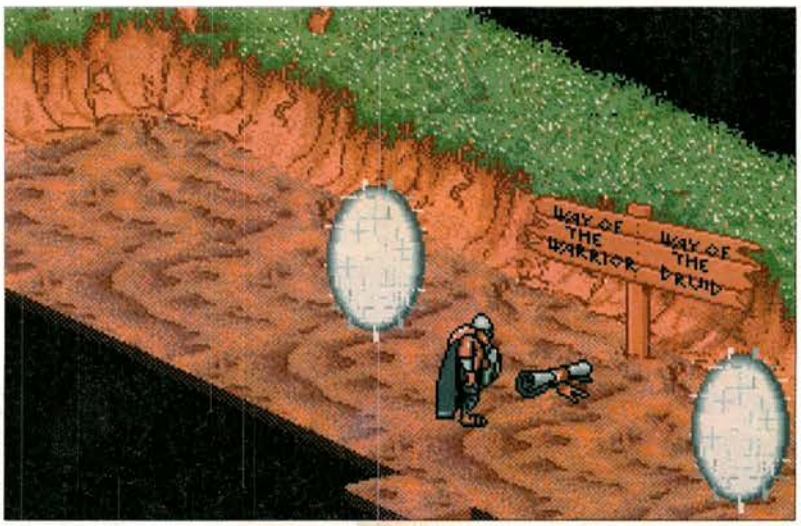
● *Nice place – just glad I had the disarm traps scroll handy*

● *I knew it. Everybody wants something in this game*

PRODUCT SPOTLIGHT

Price: £29.99
Supplier: Krisalis, Teque House, Mason's Yard, Downs Row, Moorgate, Rotherham, South Yorkshire S60 2HD.
Tel: 0709 372290
Requirements: 2Mb ram

● *Take that ...and that*



● *Great, another test. Musn't discard the scroll this time*

The best Football game EVER – out for the Archimedes

After 4 months at the top of the Gallup charts,
ARCHIMEDES OWNERS
get the chance to enjoy the game that has been twice voted
"THE BEST AMIGA GAME OF ALL TIME"

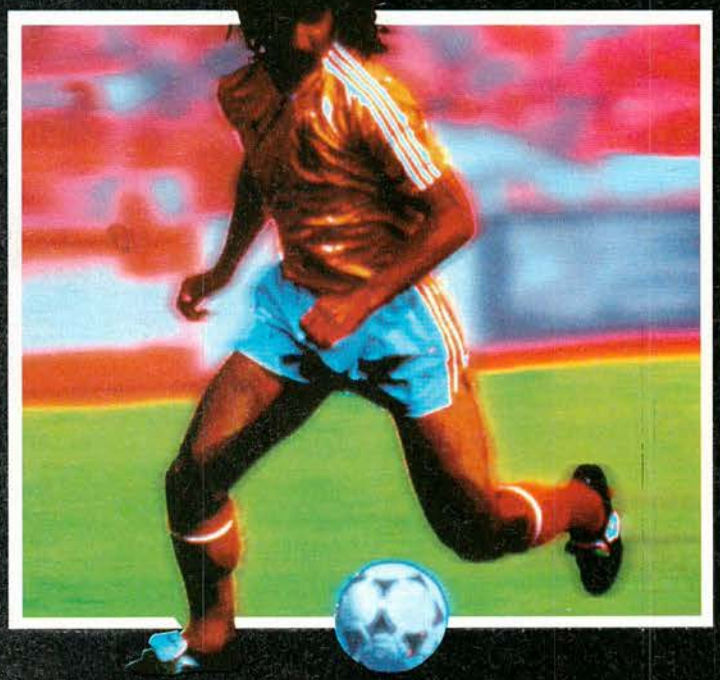
Sensible SOCCER

"Definately the best footy game out" – *Mega Action*

"The best game ever" – *Amiga Power*

"Totally addictive" – *Sega Force*

"The finest football simulation ever" – *Sega Power*



"Every other football game is redundant as of now" – *The One*

"If you like football games and don't buy Sensible Soccer, you are an idiot" – *Radio 1*

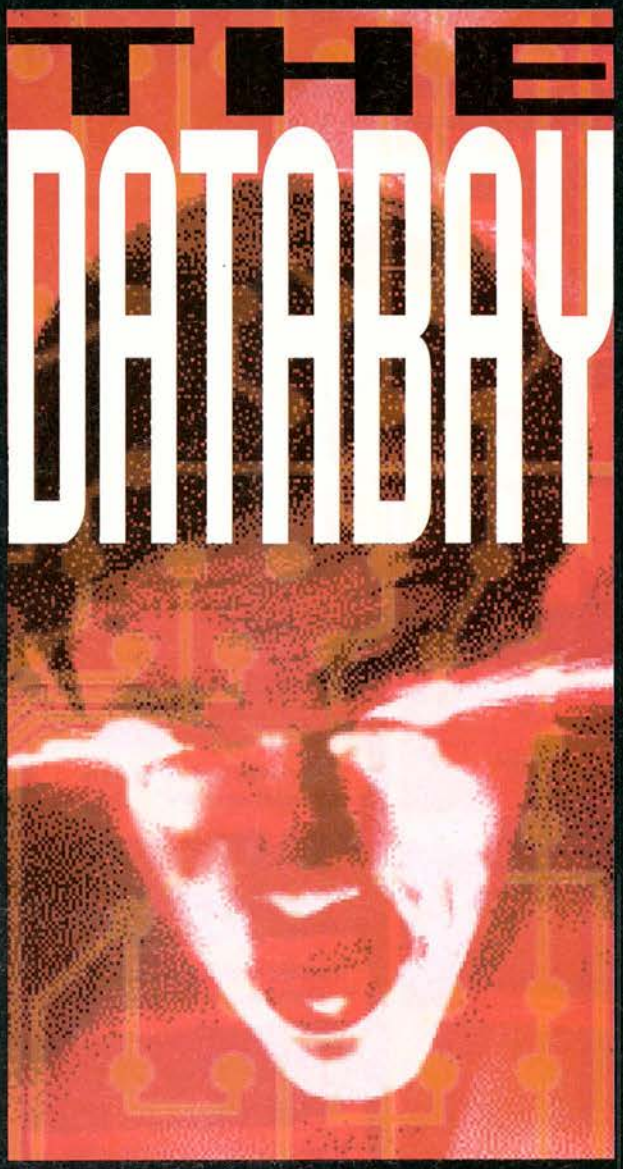
"It would be difficult to better this" – *Gamesmaster*

HIGHEST CHARTING GAME OF 1993 ★ GAME OF THE YEAR 1993

- 100 EUROPEAN TEAMS ★
- DESIGN YOUR OWN CUP TOURNAMENT ★
- 1 & 2 PLAYER ACTION ★
- DIVING HEADERS, Etc. ★
- SLICK, FAST, INTELLIGENT PASSING ★
- SAVE UP TO 10 REPLAYS AS HIGHLIGHTS ★

- ★ SECOND DISC FULL OF CROWD SOUNDS
- ★ EUROPEAN CHAMPIONSHIP COMPETITION
- ★ AMAZINGLY DETAILED KITS
- ★ SUBS BENCH WITH MANAGER
- ★ TACTICAL ADVICE ON OPPOSITE TEAM
- ★ NAMED SCORERS

C1, Metropolitan Wharf, Wapping Wall, London E1 9SS © 1993 Sensible Software. Published by Renegade



Games news, cheats and tips from the circuits of HAL

WELCOME to the first Databay of 1994 – a year that promises to bring more fresh games to demanding players everywhere. Who knows what will happen in the next year? There's only one way to find out, and you're reading it.

Games news

After a quiet spell at the end of '93 Krisalis are determined to start 1994 with a bang – or could that be a pop – a game release every month. Having begun with Lemmings II they will follow with Powermonger, Speedball II and Soccer Kid in February, March and April respectively.

Powermonger sees you controlling armies in an attempt to create a new kingdom for your deposed king. Speedball II follows a slightly different tack – you control armies of athletes battling it out on a stainless steel football pitch. Why stainless? Play it and see.

Soccer Kid shows the gentler side of sport. In this game, your character is only attacked by man-eating clams, uncouth skateboarders and coconut-wielding monkeys while trying to recover pieces of a shattered trophy. Much more peaceful.

Not to be outdone, GamesWare are due to release two blockbusting titles, hurrying on behind the magical, if not a little cynical, Simon the Sorcerer – these are the football game Striker and the epic adventure game Dune II.

Phaethon passwords

Although this game looks similar to Fervour, there is a lot more to it than twisting, narrow, devious tracks – add a few monsters, switches, keys and locked doors, and you're getting closer.

The first thing to remember is that you will need a different setup for each type of level – don't be afraid to chop and change. The reverse gear also acts as an effective brake – you can save a bit of cash in this way.

If you want to wander aimlessly round the levels, Andrew Clover has provided me with a comprehensive list of codes – he also knows the editor codes, so I might just reveal those some time.

One password that I just can't understand is *STEMULATOR* – it seems to remove screen buffering and makes the game flicker hideously. Personally, I can't see any correlation to the ST there at all.

Stunt redefiner 2000

The problem with multi-player games is that you frequently end up with several people clustered round one end of the keyboard, normally because the bookcase gets in the way of the numeric keypad.

Because of this, it's always nice to be able to redefine the keys to suit your own personal needs. Unfortunately, in Stunt Racer 2000, this wasn't possible – until now.

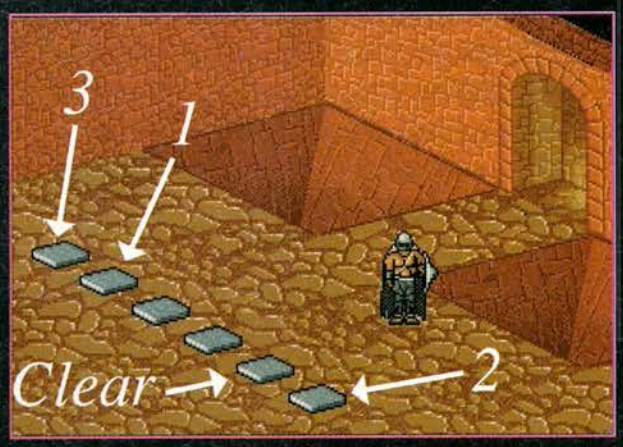
SRKeys has been designed to intercept and alter the normal keys so that you can decide on the perfect arrangement beforehand and produce a module to do the conversions. There's more information on the MegaDisk.

Hint helpline

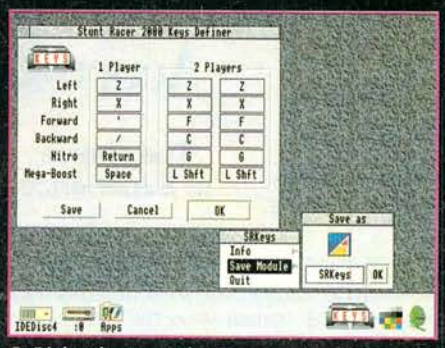
Heimdall is quite a mixture of styles – humorous at the start, then straight into the serious nitty-gritty of a fantasy adventure. The key to the whole thing rests in the three animated preludes which decide Heimdall's statistics. It makes sense to spend some time on these, otherwise your

Learning	Scenic	Standard
DISKCOPIER	MONKEYTRAP	WARPERFECT
MOUSETEETH	DOTPRODUCT	NOTTOOSLOW
MONKEYFEET	MOBIUSFILM	NIGHTNIGHT
BOLDHEROES	SINUSOIDAL	INTHESWING
ACORNA4000	TENDENCIES	WRITINFAST
INTEGRATES	SALTYRIVER	PASSESHERE
RISCOS3PRM	WEBBSCOURT	PASSESWILL
STMEQFDR13	HORIZONSEE	ALMOSTMAKE
DIVERGENCE	LEDFLICKER	MEANINGNOW
DILATATION	MUSICLOADS	IFREADINGL
MYBIRTHDAY	DECOMPRESS	LISTOFTHEM
WHATALAUGH	WHILEUWAIT	INMAGAZINE
FADINGTIES	SPACEISLOW	ORMEMORIES
BANDBONMTV	SECONDDISC	APARTTAKES
OHNOSOHARD	BUTFINALLY	THERESTILL
SLOWMEDOWN	ITISWORKIN	SEEMSTWOBE
8MBUPGRADE	GOINGTOBED	LOADSTOODO
1POUNDNOTE		SHOWISSOON
		TERMINAL66
		FOODPARCEL
		MOULDYFACE
		LOWRESPICS
		UGLYPEOPLE
		INTHEINTRO

That's enough for now – more next time.



● *Success in Heimdall lies just a step to the left...*



● *Pick a key, any key*

● *Whoops, there goes another airship*

● *Blowpipe gets the Hal treatment on the MegaDisk*

adventure will suffer. If you can't get past the switch room on the nearest island, try pressing the switches in the following order – walk over the second on the left, the one on the far right, then the one on the far left.

After you have completed that, you should find that the bridge is complete. If you have problems, walk over the second switch on the right – this clears the bridge and you can start afresh.

Most cheats for games require you to type in a password or to hold down a sequence of letters – however, the cheat modes for James Pond II are quite unusual and deserve a mention.

After you start playing, walk to the first building and look up above it to find five objects – a cake, a hammer, the Earth, an apple and a tap. It's no coincidence that the first letters of those bonuses spell *CHEAT* and if you collect them in that order, that's precisely what you will be doing – you will have a shield that will keep you from harm for most of the game.

The same technique can be used in the first sports level. Grapple your way across the second spiked pit and then collect the objects in the correct order to spell the word *LIVES* – sure enough, from that moment on, you will have an infinite number of them.

If you need assistance with Boogie Buggy, pause the game and hold down the letters G, O and D to receive infinite lives.

To access the cheat mode in the 3D adventure game Ixion, find a computer with the log-on instruction and type *LOG-ON SKELETON*. Follow this with *WOW WHAT A GREAT GAME!* and you should now be able to cheat all you want. Typing *HELLO* or *CREDITS* will display a few secret messages as well. One last nugget to remember – get into the car on April Fools' Day for a little joke.

I think we've covered all of the cheat modes for Zool, but as a final piece of information, try typing in some of these names to see messages from the authors – Ade, Tony, James, George, Greggs, Pat, Siz, Syd, Casson, Shortie, Donkin, Mick, Paul, Ritchie, Ash, Mark, Berni or Hiley.

If you have been searching diligently for secret rooms in Network 23's platform-based shoot-'em-up Warlocks, I think it's time I released a couple of secrets. To skip the first level and receive a fistful of bonuses at the same time, walk off the first cliff you come to, then turn round and walk left through what appears to be a solid wall – you will find a few nice items to collect.

However, the goodies don't end there. Leap bravely on to the far left of the waterfall, over the spring and on to the chest – don't open it yet. From there you will be able to move left again, into another room packed to the rafters with bonuses.

It is there that you will find the warp to the second level. If that hasn't satisfied you, try leaping into the third pit in the graveyard level for even more lives and bonuses.

● *A quick tip – follow the advice*

● *Heimdall having a quick chat with his boss*

● *Ever got this far? No? Then check out the passwords*

Access violation

That's it for another Databay – please keep sending in your cheats, ideas, tips and comments. I'm off to study all those new titles, so keep bashing the aliens and I'll see you again next time.

Passcode Corner

If you're struggling with Bambuzle, here's a list of passwords you might be interested in.

2) INNUENDO
3) ACTUALLY
4) CANNIBAL
5) SHADOWS
6) THUNDER
7) JOURNEY
8) REVENGE
9) HEADLONG
10) HITCHER
11) ANIMALS
12) FREEDOM
13) DIAMONDS
14) PRESSURE
15) SULTANS
16) SUICIDE
17) ALCHEMY
18) PARTYMAN
19) EMPEROR
20) KITTYKAT
21) DENSITY
22) QUALITY
23) COUNTACH
24) BLUEBIRD
25) SUNBEAM
26) DISASTER
27) CHARIOT
28) LAMBDA
29) ZEPPELIN
30) HEINKEL
31) FIREWALL
32) TYPHOON
33) WARHAWK
34) MIRAGE
35) INTRUDE

If you're having difficulties with Air Supremacy, try these passwords courtesy of Nathan Atkinson.

2) SCRAMBLE
3) STACCATO
4) EQUANIMITY

Watford Electronics Ltd

Jessa Group of Companies – Established 1972

Mail Order & Showroom: Jessa House, 1 Finway, Dallow Road, Luton, LU1 1TR, England
Tel: 0582 48 77 77 (General) 0582 74 55 55 (Sales) Fax: 0582 488 588
Showroom Only: Jessa House, 250 Lower High Street, Watford WD1 2AN, England
Tel: 0923 237774 Fax: 0923 233642

The sign of Quality

Shop Hours: 9am to 6pm (Mon.-Sat.) Thursday 9am to 8pm. FREE customer car park.
All prices exclusive of VAT; subject to change without notice & available on request. E&OE.

Acorn

The choice of Experience

Acorn RISC Computer Systems

ARM POWERED

	Without Monitor	Colour Monitor	AKF18 Monitor	AKF50 Monitor
• A3010 Action Pack	£329	£529	£579	£654
• A3010 Family Pack	£379	£579	£629	£704
• A3010 Learning Curve	–	£594	–	–
• A3020 2Mb FD	–	£648	£698	£773
• A3020 2Mb HD60	–	£769	£819	£894
• A4000 2Mb HD80	–	£839	£889	£964
• A5000 2Mb HD80	–	–	£1219	£1294
• A5000 4Mb HD160	–	–	£1435	£1510
• A4 Notebook 2Mb FD	£1345	–	–	–
• A4 Notebook 4Mb HD	£1645	–	–	–

• **Learning Curve Pack** (purchased with A4000 or A5000)	£42
• **Home Office Pack** (purchased with A4000 or A5000)	£85

0% Finance available on **A4000** and **A5000** models
Call our sales team on **0582 745555** for details.

Acorn PocketBook

• PocketBook 256K computer	£169
• PocketBook Class (10) Pack	£1699
• A-Link (requires RISC OS 3.1)	£42
• Parallel Link	£25
• 128K RAM Disc	£51
• 256K Flash Disc	£59
• 512K Flash Disc	£85
• Mains Adaptor	£12

Memory Upgrades

• A310 2Mb RAM Upgrade	£89
• A310 4Mb RAM Upgrade	£179
• A3000 2Mb RAM Upgrade	£29
• A3000 4Mb RAM Upgrade	£99
• A410/1 2Mb RAM Upgrade	£25
• A410/1 4Mb RAM Upgrade	£75
• A420/1 4Mb RAM Upgrade	£50
• A3010 2Mb RAM Upgrade	£37
• A3020/4000 4Mb RAM Upgrade	£65
• A5000 4Mb RAM Upgrade	£79
• A540 4Mb RAM Upgrade	£249

A310 upgrades are dealer fit only – we will collect, fit, deliver computer back for £24

Arc to BBC/Serial Link

Using this simple transfer link, you can transfer all your data from your BBC micro to your Archimedes. The kit is supplied with software and a connecting cable.

• RISC OS 2 version	£15
• RISC OS 3 version	£16

NEW **SPECIAL FINANCE DEAL**

Now everyone can afford an Acorn computer system, hard drive, monitor, printer, etc., with Watford Electronics 12, 24 or 36 months credit facilities. Telephone for details.

ARM3 Turbo Card

Using the latest surface mount technology on a high quality 4 layer circuit board we have reduced the overall size to a mere 53 x 45mm, and the cost to only £99. The ARM3 upgrade will increase the speed of your A300, A400 or A3000 computer by up to 6 times.

The upgrade can be fitted by the user into an A300 or A400 series machine, but for A3000 owners, the ARM3 has to be fitted by ourselves. We will collect, fit and return your A3000 to you at an additional cost of £24.

Owners of A300 series and old A440 models will need a MEMC1A upgrade to use the ARM3.

Special Offer

£99

BUY ARM 3 & RISC OS 3.1 UPGRADE AT THE SAME TIME FOR ONLY £165

RISC OS 3.1 Upgrades

• Single User Software Upgrade	£75
• Hardware Kit (300/440)	£25
• Bulk Software (10) Pack	£319

IDE Hard Disc Upgrades

The Watford IDE interface allows IDE hard discs to be used on any Archimedes computer, speeds in excess of SCSI, but at a fraction of the cost.

Features include:

- Fast 16-bit interface (8-bit on A3000 internal)
- Interrupt driven for background filer operations
- Optional card mounted 2.5" drive
- Supports 2 drives per card
- Write protect and password protection
- Power save mode on supported drives

A300/A400 Internal IDE Drives

Part No.	Capacity	Access Time	Price
ADA 0550	80Mb	17mS	£189
ADA 0530	105Mb	18mS	£219
ADA 0570	210Mb	18mS	£339
ADA 0580	330Mb	16mS	£449

All above upgrades are supplied complete with drive, controller card, cable, software and easy-to-follow instructions.

A5000 Internal IDE Drives

Part No.	Capacity	Access Time	Price
ADA 1030	80Mb	17mS	£149
ADA 0940	105Mb	18mS	£169
ADA 0950	210Mb	18mS	£239
ADA 0880	330Mb	16mS	£379

A3000 External IDE Drives

Part No.	Capacity	Access Time	Price
ADA 1020	80Mb	17mS	£249
ADA 1050	105Mb	18mS	£269
ADA 1070	210Mb	18mS	£379

A3000 Internal IDE Drives

Part No.	Capacity	Access Time	Price
ADA 0770	30Mb	19mS	£129
ADA 0720	80Mb	18mS	£219
ADA 0730	120Mb	18mS	£259
ADA 1080	200Mb	18mS	£389

A300/400 Series IDE Hard Cards

Part No.	Capacity	Access Time	Price
ADA 0800	30Mb	19mS	£149
ADA 0670	80Mb	18mS	£239
ADA 0680	120Mb	18mS	£279
ADA 1090	200Mb	18mS	£409

SPECIAL OFFER
Compression software for only £10 with any Watford IDE Hard Drive

• A300/400 IDE Interface (16-bit)	£79
• A3000 Internal IDE Interface (8-bit)	£85
• External Case & PSU for A3000	£79
• ROM Upgrade for use with RISC OS 3	£16

(only required if DEFS module is less than version 2.10)

24-Hour Credit Card Order Line

Access VISA AMERICAN EXPRESS

Tel: 0582 745555 or 0582 487777

Archi/A3000 Add-Ons

- A3000 I/O – User/Analogue/IIC (WE) £35
- Colour Card Gold (CC) £239
- **Floating Point Accelerator – A540/A5000 (Acn) £95**
- Ethernet Card for A300/400 (RiscDv) £139
- Ethernet Card for A3000/4000 (RiscDv) £139
- Mono Real-time Digitiser (WE) £75
- RISC OS Upgrade for Digitiser (WE) £25
- Archi Disc Drive Interface (WE) £19
- Backplate/Lead/Switch for above (WE) £12
- 386 1Mb PC Card – A3020/A4000 (Acorn) £225
- 486 4Mb PC Card – A3020/A4000 (Acorn) £420
- Spectra Colour Scanner (RiscDv) £549
- LaserDirect Hi-Res Card (CC) £379
- Microlin FX Pocket Fax/Modem (Pace) £199
- I/O Podule – User/Analog/1Mhz (Acorn) £79
- Archi I/O Card – Analog/User (WE) £55
- A3000 User Port/MIDI Card (Acorn) £42
- A3000 Serial Upgrade (Acorn) £19
- MIDI Expansion Card (Acorn) £65
- MIDI Add-On to I/O Podule (Acorn) £27
- MEMC1A Upgrade (WE) £29
- 4 Podule Backplane (WE) £25
- Fan for backplane (WE) £10
- 8-bit SCSI Card (Lingenuity) £129
- 16-bit SCSI Card (Lingenuity) £149
- 16-bit SCSI Card (Acorn) £249
- ST506 Hard Disc Podule (WE) £69
- Scanlight 256 for A300/400 (CC) £188
- Scanlight 256 for A3000/4000 (CC) £198
- Scanlight Professional (CC) £549
- Chroma 500 Genlock Card (Wild Vis) £419
- Chroma 150 PAL Encoder (Wild Vis) £170
- Chroma Genlock Card (Wild Vis) £209
- Scanlight Video 256 (Wild Vis) £199
- Hawk V9 MKII Digitiser (Wild Vis) £189
- Eagle M2 Multimedia Card (Wild Vis) £275
- HiVision Colour Digitiser (HCCS) £149
- Ultimate Expansion – A5000 (HCCS) £39
- Ultimate Expansion – A3000 (HCCS) £39
- Ultimate Expansion – A3010 (HCCS) £41
- Ultimate Expansion – A3020 (HCCS) £38
- Ultimate uPodule – SCSI (HCCS) £69
- Ultimate uPodule – Vision Digi (HCCS) £79
- Ultimate uPodule – Analogue (HCCS) £29
- Ultimate uPodule – Serial Port (HCCS) £49
- Ultimate uPodule – MIDI (HCCS) £49
- Ultimate uPodule – Scanlight 256 (CC) £229
- External 3.5" Disc Drive for Arc (WE) £95
- External 5.25" Disc Drive for Arc (WE) £89
- Econet Module for Archimedes (Acorn) £42
- Econet Module for A3020/A4000 (Acorn) £49
- Econet Module for A4 Notebook (Acorn) £49
- Ethernet Card III for Archi (Acorn) £149
- PowerPad single Joypad (Gamesware) £25
- PowerPad dual Joypad (Gamesware) £34

Multimedia & CD-ROM

- Cumana 300 CD-ROM Drive/Controller £339
- Cumana 300 CD-ROM Pack 1 £424
- Cumana 300 CD-ROM Pack 2 £509
- Cumana 600 CD-ROM Drive only £424
- Cumana 600 CD-ROM Drive/Controller £509
- Cumana 600 CD-ROM Pack 3 £594
- Cumana 600 CD-ROM Pack 4 £680

(Cumana packs include Drive, Interface, Cables, Stereo Speakers and a selection of CDs)

- Multimedia Expansion Unit £485
- Multimedia Expansion & 8-bit SCSI £585
- Multimedia Expansion & 16-bit SCSI £585
- Toshiba External CD-ROM Drive £385

(See software page for CD titles)

LaserDirect Printers

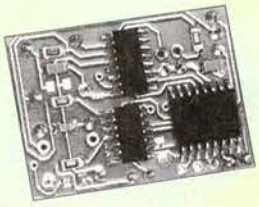
Print at high speed up to 600 dpi resolution with Computer Concepts' LaserDirect printers.

- LaserDirect Card for LBP-4+ £379
- LaserDirect Hi Res printer (4ppm) £799
- LaserDirect Hi Res printer (8ppm) £1099

Archi Accessories

- A3000 Dustcover – micro only £5
- A3000 Dustcover – micro & monitor £9
- A3010/3020 Dustcover – micro only £5
- A300/400 Dustcover – micro & monitor £9
- A300/400 Keyboard Dustcover £5
- A5000 Dustcover – micro & monitor £9
- 14" Monitor Dustcover £6
- Perspex Keyboard Cover £8
- A3000 Monitor Stand (WE) £15
- A3000 Monitor Stand (Acorn) £29
- A3000 Shoulder Bag £10
- A3000 External Podule Case £15
- A4 Notebook Carry Case £35
- A4 Notebook Battery Pack £49
- A4 Notebook Mains Adaptor £59
- Archimedes Keyboard Extension Lead £8
- Archimedes Replacement Mouse (WE) £29
- Quest Tracerball for Archi (WE) £26
- Marconi Trackerball for Archi £69
- Archi Mouse Port Splitter £10

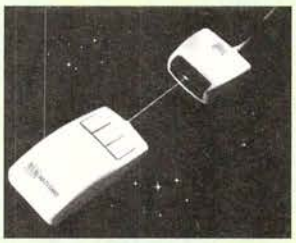
VIDC Enhancer



The Watford VIDC Enhancer for the Archimedes 300/400 and A3000 computers, caters for all types of Multiscan and VGA monitors.
A disc of utilities is supplied to allow you to define your own modes, and change existing ones. A desktop mode selector is also supplied.
The Multiscan enhancer is for use with monitors with composite sync inputs, whereas the VGA enhancer is used with VGA, SVGA monitors with separate sync inputs. (A300 series models may require modification for VGA enhancer).

- Multiscan VIDC Enhancer £19
- VGA VIDC Enhancer £35

Archi Cordless Mouse



Features
- Infra-red signal transmission
- High resolution 200dpi
- Anti-static silicon rubber coated ball
- Auto standby mode after 5 seconds inactivity
- Auto power-off after 20 minutes inactivity

£26

Concept Keyboards

- A4 Standard £89
- A3 Standard £95
- A4 Primary £94
- A3 Primary £99
- A4 Designer £104
- A3 Designer £104
- Universal 2010 Keyboard A4 £104
- Universal 2010 Keyboard A3 £107
- User Port cable for 2010 Keyboard £9
- Arc Serial cable for 2010 Keyboard £9
- Concept Designer software for Arc £22

Scan256 Hand Scanner

If you need a 256 grey scale hand scanner for your Archimedes then look no further.
Scan256 gives you up to 256 grey levels at a maximum resolution of 400dpi and is supported by state-of-the-art software. This makes it the only sensible scanning and image processing solution for the Acorn 32-bit range of machines.

Features include:
- More than one copy of an image in memory at once.
- Highly advanced image processing tools.
- Convolution digital filtering with over 100 filters.
- Adjustable scale and size during scan.
- Save images in industry standard formats.
- True brightness, contrast and gamma controls.
- Selectable scanning modes.
- 105mm scanning width.
- Ability to shear and rotate the image.

only £159

- Scan256 for A3000 (external) £169
  (ring for availability)

Note: Scan256 is not suitable for A3010/A3020 or A4000 computers.

Archi MKII Hand Scanner

Watford's Midi hand scanner for the Archimedes and A3000 has a maximum resolution of 400dpi, and a scan width of 4". As you scan the image the results are displayed on screen in real time. You can then save the image at full resolution to get the best quality output or at screen resolution to save on memory. The software is supplied on ROM, so there are no discs to load. Features include: cropping and scaling images, X flip and Y flip, and edge detection allows you to transform solid images into outlines.

- A300/400/A5000 version £89
- A3000 external version £99
- v1.10 ROM Upgrade for RISC OS 3 £20

Archi A4 Scanner

The 216mm scanning width can cope with both desktop scanning of single sheets, photographs, etc, with its detachable sheet feeder, or used as an A4 wide hand scanner. 64 grey levels are produced from the scanner at resolutions up to 400dpi. The software included on ROM allows you to adjust contrast and brightness of the scanned image, rotate, shear and cut out sections of the image. The scanner uses a green light source which gives improved contrast on images over conventional red light scanners.

- A4 Scanner for A300/A400/A5000 £189
- A4 Scanner for A3000 (external) £199
- Sheet Feeder for A4 Scanner £69

Educational Software

10 out of 10 Early Essentials	£18
10 out of 10 Junior Essentials	£18
10 out of 10 Maths - Number	£18
10 out of 10 Maths - Algebra	£18
10 out of 10 Maths - Statistics	£18
10 out of 10 English	£18
10 out of 10 French	£18
10 out of 10 Dinosaurs	£18
10 out of 10 Driving Test	£18
Animal Rescue	£22
Animated Alphabet	£18
Animated Numbers	£18
An Eye for Spelling	£31
Arcventure I – Romans	£24
Arcventure II – Egyptians	£24
Arcventure III – Vikings	£24
Around the World in 80 Days	£TBA
Aztecs	£37
Badger Trails	£34
Best Four Adventure	£34
Best Four Language	£34
Best Four Maths	£34
Body	£17
Bookbinder	£43
Bookstore – Primary	£35
Bookstore –Secondary	£52
Britain since 1930	£26
Bumper Disc 1	£14
Bumper Disc 2	£14
Circus	£14
Concept Keyboard Designer	£22
Connections	£27
Concept Kids	£21
Converta Key	£9
Crystal Rain Forest	£34
Desktop Stories	£35
Dream Time	£19
Export, Trade and Industry	£34
Farm (5-7 years)	£18
Fleet Street Phantom	£22
Food for Thought	£17
Fun School 3 Blue (under 5)	£17
Fun School 3 Red (5-7 years)	£17
Fun School 3 Green (over 7)	£17
Fun School 4 Red (under 5)	£17
Fun School 4 Green (5-7 yrs)	£17
Fun School 4 Blue (over 7)	£17
Geordie Racer	£24
Glimpse	£8
Graph IT	£17
Granny's Garden	£TBA
Hilighter	£30
Insight	£68
Investigating Maths	£34
Jigsaw	£18
Landmarks – Aztec	£17
Landmarks – Civil War	£17
Landmarks – Columbus	£17
Landmarks – Egypt	£17
Landmarks – Elizabeth I	£17
Landmarks – Rainforest	£17
Landmarks – Tudors & Stuarts	£17
Landmarks – Victorians	£17
Landmarks – World War II	£17
Linkword – French	£32
Linkword – German	£32
Linkword – Spanish	£32
Magpie	£58
Making of the UK	£35
Mapping Skills	£25
Mapventure	£22
Medieval Realms	£35
Microbugs	£24
Money Matters	£14
Nature Park Adventure	£24
Naughty Stories vol.I	£48
Naughty Stories vol.2	£48
Numerator	£33
Picture Book	£14
Podd	£23
Recall	£36
Seelinks – Ourselves	£26
Seelinks – Pondwatch	£34
Seelinks – Tourism	£54
Seelinks – Transport	£34
Selladore Tales	£23
Settlement	£30
Snippet	£31
Space Mission Mada	£22
Splash	£18
Stig of the Dump	£21
Story Starts	£24
Teachers Cupboard	£24
Teddy Bears Picnic	£22
Topographer	£62
Victorians	£19
Viewpoints	£33
Wizards Revenge	£16
World Maker	£46
World Map Study	£59
Worst Witch	£21

Sales Hotline
0582 745555

Games

Adventures of Sylvia Lane	£20
Air Supremacy	£13
Apocalypse	£14
Arcade 3 Compilation	£11
Battle Chess	£21
Birds of War	**£25**
Black Angel	£23
Boogie Buggie	£14
Break 147 & Superpool	£24
Bug Hunter in Space	£9
Carnage Inc.	**£20**
Cataclysm	£15
Champions Compilation	£21
Chess 3D	£14
Chocks Away Compendium	£26
Chocks Away Extra Missions	£17
Chopper Force	£18
Crystal Maze	**£29**
Cyber Chess	£25
Cycloids	£17
Demons Lair	£18
Dungeon	**£24**
Ego Repton 4	£17
Elite	£31
Enter the Realm	£17
E-Type Compendium	£17
E-Type Extra 100 Miles	£14
Fervour	£18
F.R.E.D.	**£17**
Galactic Dan	£14
Games Wizard	£17
Gods	£18
Grevious Bodily Arm	£14
Haunted House	**£20**
Heimdall	£22
Hero Quest	£21
Holed Out Compendium	£17
Interdictor 2	£22
Ixion	£22
Jahangir Khan Squash	£19
James Pond	£18
James Pond 2 - Robocod	**£21**
Lemmings	£18
Lemmings 2 - Tribes	**£22**
Lotus Turbo Challenge II	£18
Mad Professor Mariati	£14
Magic Pockets	£22
Master Break	£13
Man at Arms	£14
Manchester Utd in Europe	£18
Nebulus	£18
Oh No! More Lemmings	£14
Omar Sharif's Bridge	£18
Pandora's Box	£17
Pipe Mania	£15
Play It Again Sam 1	£17
Play It Again Sam 2	£17
Play It Again Sam 3	£17
Populous	£21
Powerband	£14
Powermonger	£24
Quark	£19
Quazar	£10
Real McCoy 2	£21
Real McCoy 3	£21
Real McCoy 4	£21
Return to Doom	£16
Repton 3	£14
Saloon Cars Deluxe	**£24**
Sensible Soccer	£22
Sim City	**£21**
Simon the Sorcerer	£31
Stunt Racer 2000	**£24**
SWIV	£18
Sylvia Lane	**£18**
Striker	£17
Technodream	£18
The Last Ninja	£18
Twin World	£13
Virtual Golf	**£24**
Warlocks	£24
Worldscape	£16
White Magic 2	£15
Xenon 2	**£21**
Zool	**£18**

TOP TEN GAMES

① Lemmings 2 - Tribes	£24
② Zool	£18
③ Gods	£18
④ Sensible Soccer	£22
⑤ Turbo Challenge II	£18
⑥ Chocks Away	£26
⑦ Lemmings	£18
⑧ Populous	£21
⑨ Saloon Cars Deluxe	£24
⑩ SWIV	£18

DTP

Impression Junior	£63
Impression II	£109
Impression Borders Disc	£12
Impression Business Sup.	£38
Impression Style	**£89**
Impression Publisher	£135
Impression Publisher OPI	£223
Ovation	£82
Desktop Thesaurus	£16
Equasor	£36
Font Pack - Avant Garde	£23
Show Page	£139
Spellmaster	£42
Sleuth OCR	£40
Type Studio	£37

Word Processors

DeskEdit 3	£24
Data Word	£14
Easiwriter II	£114
Easiword Plus	£42
Pendown	£45
Pendown Plus	£67
Primeword	£50
Wordz	**£84**
WordWorks	£39

Spreadsheets

Eureka	£95
ProSheet	£39
Resultz	**£105**
Schema	£89

Databases

DataVision	£66
Flexifile	£68
Knowledge Organiser	£75
Masterfile III	£45
Multistore v2.01	£99
Pinpoint	£64
Pinpoint Junior	£23
S-Base Developer	£139
S-Base Personal	£69

Integrated

Acorn Advance	**£85**
Desktop Office	£69
Pipedream 3	£70
Pipedream 4	£117

Languages

Acorn Desktop Assembler	£118
Acorn Desktop C	£179
Acorn PC Soft	£89
Control Logo	£20
Easy C	**£45**
Logotron Logo	£45
RiscBASIC Compiler	£66
RiscFORTH Compiler	£66
Robo Logo	£37

Printer Drivers

Expression PS	£19
Citizen Colour Driver - OS 2	£15
Deskjet 500C/550C Driver	£15
Epson JX Printer Driver	£15
Star Colour Driver - OS 2	£15
TurboDriver - Canon BJ	£42
TurboDriver - Epson Stylus	£42
TurboDriver - HP	£42

CD Software

Acorn Education Directory	£29
Artworks	£165
Artworks Clip Art	£19
British Birds	£150
CD – 4 Disc Set	£149
CD Francais	£120
Creepy Crawlies	£90
Dictionary of Living World	£175
Dinosaurs	£124
Grooves	£90
Hutchinson Encyclopaedia	£99
Illustrated Holy Bible	£23
Illustrated Shakespeare	£23
Image Warehouse	£53
Revelation II	£98
Sherlock Holmes	£23
Space Encyclopaedia	£57
Really Useful CD v1	£47
Really Useful CD v2	£47
Times & Sunday Times	£195
Woodland	£144

Graphics

Artisan 2	£42
Autosketch II	£65
ArcTist	£14
Atelier	£59
Artworks	£115
Chartwell	£24
Craftshop 1	£18
Craftshop 2	£18
Euclid 2	£59
Film Maker	£55
GraphBox	£54
GraphBox Professional	£102
Illusionist	£68
Image Animator	£65
Kid Pix	**£34**
Plot	£66
Poster	£74
Presenter GTI	£65
PrimeArt	£46
Pro Artisan 2	**£99**
Render Bender II	£89
Rephorm	£49
Revelation II	£74
Revelation Image Pro	£125
Titler	£114

CAD

Arc PCB v1.7	£79
Arc PCB Professional	£169
Arc PCB Schematics	£229
CADet	£125
SolidCAD	£65
SolidTools	£169
PowerRouter	£129
Excellon Drill	£53

Accounts

Business Accounts System	£275
Business Accounts Modules	£85
Payroll Manager	£66
Prophet Accounts	£131
Home Accounts	£33
Financial Accountant	£225
Shareholder Professional	£195
Micro Trader System	£275
Micro Trader Modules	£75
PlanING	£95
ProjectING	£295

Site Licences

Advance Primary Licence	£181
Advance Secondary Licence	£440
Artworks	£540
Impression Style	£435
Impression II	£542
Ovation DTP	£475
Pinpoint	£379
Pipedream 4	£695
S-Base	£399

Communications

ArcComm 2	£38
ArcTerm 7	£64
Hearsay II	£75
ArcFax	£25

SPECIAL OFFER
Pace Microlin pocket FAX/Modem, supplied with ArcFax and ArcTerm7 software. Complete with connecting cables, etc.
only £199

Software Offers

• Acorn DTP	£25
• First Word Plus	£20
• Lemmings	£12
• Chuck Rock	£10
• Quest for Gold	£9
• Pacmania	£9
• Impression Junior	£35
• Gods	£15

On-Site Warranties

1yr - A3010, A3020 and A4000	£25
1yr - all A5000 models	£34
3yr - A3010 and A3020 FD	£42
3yr - A3020 HD and A4000	£51
3yr - all A5000 models	£68

Miscellaneous

Armadeus	£58
Recordz	£32
Rhapsody 2	£45
Rhapsody 3	**£78**
AUN/Level4 Fileserver	£369
Speech!	£17
Investigator 3	£49
Font Pack 1	£10
Font Pack 2	£10
Font Pack 3	£10
MultiFS	£29
Notate	£57
Vox Box	£45
Score Draw	£45

Software Bundles

• **Arcventure** Romans, Egyptians, Vikings	£65
• **Linkword** French, German, Spanish	£87
• **Lemmings &** Oh No! More Lemmings	£27
• **Crystal Maze &** Games Wizard	£44
• **Artworks &** Clip Art CD	£119
• **Impression II &** Business Supplement	£130
• **PC Emulator &** Acorn Advance	£155
• **Ovation & Thesaurus**	£69

Books

!Help 3 - RISC OS 3	£10
!Help - RISC OS 2	£10
!Help - Draw	£16
Advanced BBC User Guide	£10
Archimedes Assembly Lang.	£15
Archimedes Operating Syst.	£15
A3000 Technical Manual	£29
A5000 Technical Manual	£65
A3010 Technical Manual	£30
A4 Portable Handbook	£7
A4 Technical Manual	£65
A4 Welcome Guide	£10
A540 Technical Manual	£65
Acorn to PC	£7
Ansi C Rel.4 User Guide	£25
Artworks Made Easy	**£15**
Archi Games Maker Man.	£15
ARM Technical Data Guide	£14
BBC BASIC User Guide	£20
BASIC V - Dabhand Guide	£10
Budget DTP on the Arc	£13
C: A Dabhand Guide 3rd Ed.	£17
Control on the Archimedes	£10
First Impressions	£28
File Handling for All	£10
Good Impressions	£25
Graphics on the Arm	£15
Impression II - Dabhand Guide	£15
Mastering 1st Word Plus	£14
Master 128 Ref Man. Part 1	£14
Master 128 Ref Man. Part 2	£14
Master 128 Advanced Ref.	£10
RISC OS Style Guide	£10
RISC OS 2 Prog. Ref. Man.	£79
RISC OS 3 Prog. Ref. Man.	£99
RISC OS 3 Apps/User Gd.	£20
RISC OS 3 First Steps	**£15**
Wimp Prog. for All	£13

Home Office

Includes Pipedream 4, PC Soft with DR DOS 6, Easiwriter, Datapower, plus demonstration software.
only £85

Learning Curve

Includes Acorn Advance - integrated software package, PC Soft with DR DOS v6, plus some demonstration software.
only £42

Buy any two titles from this page and select one game at half normal retail price.
(excludes Software Offers)

Manual Printer Sharers

Standard Low Cost Sharers

	Serial	Parallel
2 to 1	£8	£9
3 to 1	£11	£12
4 to 1	£15	£16

Professional Sharers

	Serial	Parallel
2 to 1	£12	£13
3 to 1	£15	£17
4 to 1	£24	£26

Cross Over Sharers

- 2 in / 2 out Parallel £29
- 2 in / 2 out Serial £28
- 3 in / 2 out Serial £36

Auto Printer Sharers

	Serial	Parallel
2 to 1	£27	£29
3 to 1	£44	£45
4 to 1	–	£75

256K Multi Spoolers

These parallel auto printer sharer switches have built-in 256K buffers.

- 2 in / 2 out £99
- 4 in / 2 out £115
- 8 in / 1 out £149

Please note that cables are not supplied with the printer sharers, but are available from £5 each. Check when ordering which are required.

Laser Printers

Brother HL4-PS	4ppm	£965
Brother HL6	6ppm	£427
Brother HL10-PS	10ppm	£1265
Brother HL10-DV	10ppm	£1016
Brother HL10-DPS	10ppm	£1435
Canon LBP4 Lite	4ppm	£478
Canon LBP4 Plus	4ppm	£639
Canon LBP4 U	4ppm	£359
Canon LBP8 Plus IIIR	8ppm	£1420
Canon LBP8 IV 600dpi	8ppm	£932
Epson EPL4300	4ppm	£520
Epson EPL5000	6ppm	£435
Epson EPL5200	6ppm	£489
Epson EPL7500PS	6ppm	£1135
Fujitsu VM600	6ppm	£539
HP LaserJet 4L	4ppm	£456
HP LaserJet 4ML	4ppm	£757
HP LaserJet 4P	4ppm	£737
HP LaserJet 4MP	4ppm	£1047
HP LaserJet 4	8ppm	£998
HP LaserJet 4M	8ppm	£1369
HP LaserJet 4SI	16ppm	£2199
HP LaserJet 4SIMX	16ppm	£3325
NEC Silentwriter S62P	6ppm	£883
NEC Silentwriter S102	6ppm	£914
NEC Silentwriter 290	8ppm	£1125
NEC Silentwriter 290P	8ppm	£1449
OKI OL410ex	4ppm	£585
OKI OL400ex	4ppm	£418
Panasonic KX-P4410	5ppm	£445
Panasonic KX-P4430	5ppm	£579
Panasonic KX-P4440	11ppm	£535
Panasonic KX-P4455 PS	11ppm	£1249
Star LP4 Postscript	4ppm	£759
Star LS5	5ppm	£449
Star LS5 EX	5ppm	£548
Star LS5 TT	5ppm	£739
Star LP8 III Postscript	8ppm	£1125

Laser Consumables

Toners, Drums, Developers

- Canon LBP4 / Star LP4 Toner £52
- Canon LBP8 III / Star LP8 Toner £59
- Canon LBP8 IV Toner £75
- Epson EPL4000/4100/4300 Toner £55
- Epson EPL4100 Photoconductor Unit £89
- Epson EPL5000/5200 Toner £89
- Fujitsu VM600 Toner £89
- Fujitsu VM800 Toner £109
- HP LaserJet IIP/IIIP Toner £48
- HP LaserJet III/IIIP Toner £58
- HP LaserJet 4/4M Toner £72
- HP LaserJet 4L/4ML Toner £55
- NEC Silentwriter Toner £84
- Panasonic KX-P4410/4430 Toner £22
- Panasonic KX-P4410/4430 Drum £109
- Panasonic KX-P4410/4430 Developer £79
- Panasonic KX-P4451/4455 Toner £19
- Panasonic KX-P4451/4455 Drum £93
- Panasonic KX-P4451/4455 Developer £80
- OKI OL400/OL800 Toner £18
- OKI OL400e Toner £17
- Qume Crystalprint Toner £84
- Qume Crystalprint Drum £189

Laser Accessories

- HP Adobe Postscript cartridge - III/IIID £359
- JetPage Postscript cartridge - III/IIIP £225
- HP Postcript module - LJ 4 £270
- Lower Paper Cassette Tray - IIIP £115
- Envelope Feeder - LJ4/4M £199
- 500sht Paper Cassette - LJ4/4M £205
- LaserJet font cartridges from £79
- JetDirect cards for LaserJet 4/4M £359
- Ozone filter for Panasonic KX-P4420 £9
- Ozone filter for Panasonic KX-P4450 £20
- Appletalk interface - LaserJet III/IIID £135

Laser RAM Upgrades

Memory Upgrades

Canon LBP4 1Mb RAM		£105
Canon LBP8 2Mb RAM		£125
HP LaserJet II/IID	1Mb RAM	£60
	2Mb RAM	£96
	4Mb RAM	£142
HP LaserJet III/	1Mb RAM	£49
	2Mb RAM	£80
	4Mb RAM	£132
HP LaserJet 4/4M	1Mb RAM	£69
	2Mb RAM	£75
	4Mb RAM	£159
	8Mb RAM	£299
Panasonic 4420	1Mb RAM	£59
	2Mb RAM	£89
	4Mb RAM	£149
Epson EPL4100	2Mb RAM	£120

Star Printers

	Printer	CSF	Ribbon
LC15	£186	£135	£5
LC20	£102	£60	£4
LC100C	£117	£65	£9
LC24-15	£245	£135	£5
LC24-100	£140	£69	£5
LC24-20 MK2	£175	£65	£5
LC24-200C	£205	£65	£12
LC200C	£151	£65	£12
SJ-48	£169	£43	£16
SJ-144	£434	–	£POA
XB24-200C #	£324	£80	£12
XB24-250C #	£389	£139	£12
ZA200 #	£260	£89	£12
ZA250 #	£324	£139	£12
LC24-30	£POA	–	–
LC24-300	£POA	–	–

- 8K Serial interface - LC20/24-20/200 £52
- Serial interface - XB24/ZA200/250 £52
- Black ribbons for colour printers £5

NEC Printers

	Printer	CSF	Ribbon
P22Q	£181	£59	£6
P32	£235	£59	£6
P62	£339	£79	£8
P72	£395	£115	£8
P90	£577	£115	£8
Jetmate 400	£169	–	–

- Black ribbon for P20/P30 £6
- Black ribbon for P60/P70/P90 £8
- Colour ribbon for P60/P70/P90 £14
- Colour Option for P60/P70 £59

Fujitsu Printers

- DL1250 dot matrix printer £315
- B100 inkjet printer £159
- B200 inkjet printer & CSF £215
- Ink cartridge for B100/B200 £14
- Ink Refill for B100/B200 £10

Citizen Printers

120D+	£93	Swift 200	£178
PN48	£179	Swift 240	£180
Swift 90	£132	Swift 240C	£193
Swift 90C	£198	ProJet 2	£220

- Swift 24/240 Black ribbon £4
- Swift 24/240 Colour ribbon £13
- 120D Black ribbon £4
- CSF for Swift 24/240/200 £75
- Citizen printer driver for Archimedes £15

Hewlett Packard Printers

- DeskJet 510 mono £198
- DeskJet 500 Colour £335
- DeskJet 550 Colour £398
- DeskJet 310 £169
- DeskJet 1200 Colour £931
- DesignJet 600 £4999

Accessories

- DJ500 black ink cartridge - std capacity £16
- DJ500 black ink cartridge - hi capacity £23
- DJ500 colour ink cartridge £25
- Black ink refill for DJ500 £10
- DJ1200 black ink cartridge £22
- DJ1200 colour ink cartridge £26
- Paintjet black ink cartridge £17
- Paintjet colour ink cartridge £27
- CSF for DeskJet Portable £49
- Carry case for DeskJet Portable £49
- FX Emulation cartridge (500 mono) £45
- 256K RAM Cartridge for DeskJet £69
- WordPerfect font cartridge £89
- Dustcover for DeskJet 500/550 £6
- Archi printer driver for DJ550C £15
- Turbodriver for DeskJet/LaserJet £42 (only £39 when purchased with HP Printer)
- 50x A4 Transparencies for DJ (636G) £40
- 50x A4 Glossy Paper for DJ (636J) £40
- 50x A4 Cut sheet Paper for DJ (636Z) £15
- Deskjet 310 Colour kit £49

High Quality InkJet Paper

A4 90gsm 500 sheets, only £7

Coloured Paper also available £3.99

HP World Wide Support Packs

Three years on-site warranty cover

- LaserJet 4L, 4ML, DeskJet 1200C £100
- LaserJet 4, 4M £170
- LaserJet 4Si £505
- Mono DeskJet & DeskWriter £55
- Colour DeskJet & DeskWriter £65

Integrex Printers

- ColourJet 2000 £599
- ColourJet Series 2 £335
- CSF for ColourJet Series 2 £45
- BetaJet £185
- CSF for BetaJet £43
- Black ink cartridge - ColourJet 132 £14
- Colour ink cartridge - ColourJet 132 £23
- 100 A4 Transparencies £55

Epson Printers

	Printer	CSF	Ribbon
LX400	£92	£69	£4
LX100	£115	–	£4
LX850+	£135	£69	£4
LX1050	£204	£125	£6
FX870	£265	£47	£4
FX1170	£335	£69	£6
LQ100	£122	–	£4
LQ570	£204	£39	£4
LQ870+	£359	£39	£6
LQ1060	£585	£155	£6
LQ1070+	£310	£69	£6
LQ1170	£445	£69	£6
LQ2550	£669	£360	£6
SQ870	£419	£170	£23
SQ1170	£560	£155	£23
SQ2550	£669	–	£23
Stylus 300	£169	–	£10
Stylus 800	£199	–	£10
Stylus 1000	£355	–	£10

- Serial I/F - 0K £28 Serial I/F - 8K £75
- LQ100 Tractor Feed £29
- LQ800/850 Tractor Feed £69
- LQ2500 Tractor Feed £90
- Transparencies for Stylus 800 etc £35

Canon Printers

	Printer	CSF	2nd Bin	Ink
BJ10sx	£165	£43	–	£16
BJ200	£244	–	–	£16
BJ230	£280	–	–	£16
BJ300	£305	£88	£88	£12
BJ330	£369	£92	£92	£12
BJC600	£	–	–	–
BJC800	£1219	–	–	–

- BJC600 ink cartridge: Black £6 Colour £7
- BJC800 ink cartridge: Black £16 Colour £20
- Battery pack for BJ10ex/10sx £33
- Black ink refill for BJ10ex/BJ10sx £12
- Turbodriver for BubbleJet & BJC £42 (only £39 when purchased with Canon Printer)

Panasonic Printers

	Printer	CSF	Ribbon
KX-P1170	£98	£59	£7
KX-P1123	£124	£59	£7
KX-P1624	£264	£126	£8
KX-P1695	£267	£126	£8
KX-P2180M	£126	£69	£7
KX-P2123M	£144	£69	£7
KX-P2124	£215	£89	£7
KX-P2624 #	£272	£126	£8
KX-P2023	£158	£	£8

- Dustcover for 80 column printers £6
- Serial interface for above printers £46
- 32K Buffer for above printers £16
- Colour kit for 2180/2123/2124 £37

Printer Stands

- 80 column Perspex printer stand £14
- 132 column Perspex printer stand £18
- 80 column Professional printer stand £16
- 132 column Professional printer stand £25

Paper & Labels

- 9.5" x 11" fanfold paper - 1000 sheets £7
- 9.5" x 11" fanfold paper - 2000 sheets £11
- 9.5" x 11" NCR 2pt paper - 1000 sheets £21
- A4 fanfold paper - 1000 sheets £11
- A4 fanfold paper - 2000 sheets £21
- A4 cut-sheet paper 80g - 500 sheets £3.50
- A4 cut-sheet paper 90g - 500 sheets £7
- 90 x 36mm single row labels - 1000 £4.50
- 90 x 36mm twin row labels - 1000 £4.60
- 102 x 36mm single row labels - 1000 £4.70
- 70 x 37mm A4 laser labels - 2400 £15

Printer Ribbons

- Brother M1009/GLP £2.95
- Epson EX800/EX1000 Black £6.00
- Epson RX/FX/80/85/800 £3.00
- Epson LX80/LX86 £4.00
- Epson LQ400/550/800/850 £5.50
- Epson LQ1050/2500 £12.00
- Epson LX400/800 £3.50
- Kega Taxan KP810 £6.00
- NEC P2200 £4.50
- Panasonic KX-P1080/81 £7.00

Dustcovers

- BBC Model B/B+ £6.00
- BBC Master 128 £6.00
- Citizen 120D £6.00
- Citizen Swift 24 £6.00
- Epson LQ400/LX400 £6.00
- Epson LQ570/LQ870 £6.00
- Epson FX80/FX800 £5.00
- Panasonic KX-P1170/KX-P1180 £6.00
- Panasonic KX-P1124/KX-P11241 £6.00

24hr Credit Card Order Line

Tel: 0582 745555 or 487777

Microvitec Monitors

- Cub 1451 - 14" Medium Res for BBC £199
- Cub 3000 - 14" Medium Res for Arc £195
- Cub 1440 - 14" Multiscan for Arc £389
- Cub 1450 - 14" Multiscan for Arc £POA
- Touchtec 501 Touch Screen for BBC £239
- Touchtec 3000 Touch Screen for Arc £POA

Acorn Monitors

- AKF30 14" Med Res RGB - Grey Case £199
- AKF40 14" Med Res RGB - Cream Case £199
- AKF52 14" Multiscan Monitor £299
- AKF50 14" Hi Res Multiscan Monitor £375

Multiscan Monitors

- Eizo T240i 14" £483
- Eizo F340i-W 14" £625
- Eizo F550i 14" £899
- NEC 2A-N £274
- NEC 3FG £360
- NEC 3FGe £449
- NEC 4FGe £479
- NEC 5FG £925
- NEC 5FGe £780
- Panasonic C1381 £199
- Panasonic TX-1731MAB £616
- Philips 4CM4270 £289
- Philips 7CM3279 £249
- Philips 7CM5279 £269
- Taxan 787 14" SVGA £229
- Taxan 787LR 14" SVGA Low Rad. £239
- Taxan 789LR 14" SVGA Low Rad. £289
- Taxan 795 14" Trinitron £465
- Taxan 875+ LR 17" Low Rad. £737

Aries A-Scan Monitor

The new Aries A-Scan Pro multiscan monitor offers high-definition flicker-free display at a price that is affordable.

- 14" high resolution colour display
- 0.28mm dot pitch, non-glare tube
- 29KHz to 70KHz horizontal frequency
- Low radiation Swedish MPRII standard
- 1280 x 1024 non-interlaced
- complete with connecting cable (15pin VGA)

£249

Aries Monitors

Aries 6000 15" Monitor

- 15" high resolution colour display
- 0.28mm dot pitch, non-glare tube
- microprocessor control
- 29KHz to 70KHz horizontal frequency
- front panel controls
- complete with connecting cable (15pin VGA)

£299

Aries 7000 17" Monitor

- 17" high resolution FST colour display
- 0.28mm dot pitch, non-glare tube
- 1280 x 1024 @ 70Hz non-interlaced
- microprocessor control
- 29KHz to 70KHz horizontal frequency
- complete with connecting cable (15pin VGA)

£575

Aries 75601 17" Monitor

- 17" high resolution FST colour display
- 0.28mm dot pitch, non-glare tube
- digital controls with LCD panel

£695

Aries 7500 17" Monitor

- 17" high resolution colour display
- 0.28mm dot pitch, non-glare tube
- 29KHz to 75KHz horizontal frequency
- front panel controls
- complete with connecting cable (15pin VGA)

£525

BBC Software

- Logotron Logo (ROM) £43
- Numerator (ROM) £39
- Pendown (ROM) £32
- View 3.0 (ROM) £45
- ViewSheet (ROM) £36
- ViewStore (ROM) £36
- ViewSpell (ROM/80T Disc) £28
- InterWord (ROM) £36
- InterSheet (ROM) £37
- InterChart (ROM) £25
- InterBase (ROM) £49
- Mega3 - Word/Chart/Sheet (ROM) £76
- SpellMaster (ROM) £42
- WordWise Plus (ROM) £38
- WordAid (ROM) £24
- View Printer Driver Generator (Disc) £12
- View Printer Driver (ROM) £29
- Fun School 3 Under 5s (Disc) £17
- Fun School 3 5-7yrs (Disc) £17
- Fun School 3 Over 7s (Disc) £17
- Quest Paint (ROM/Disc) £23
- ConQuest (ROM) £24
- Quest Fonts (Disc) £15
- Quest integrex 132 Driver (Disc) £18
- Wapping Editor (ROM/Disc) £39
- Wapping Art (Disc) £15
- Wapping Fonts #1 (40T Disc) £12
- Wapping Fonts #2 (80T Disc) £13
- AMX Super Art (ROM/Disc) £25
- AMX Stop Press (ROM/Disc) £18
- Page Fonts for Stop Press (Disc) £13
- BASIC 2 (ROM) £22

BBC Accessories

- 32K Shadow RAM Card £39
- Solderless ROM Board £32
- 32K ROM/RAM Card £39
- 64K ROM/RAM Card £52
- 128K ROM/RAM Card £83
- Sideways ZIF Socket System £18
- 16K Static RAM for ROM/RAM £8
- 16K DRAM for ROM/RAM £13
- Battery Backup for ROM/RAM £3
- Read/Write switch for ROM/RAM £2
- Sideways RAM Utilities Disc £8
- AMX Mouse only £25
- Quest Mouse III £25
- Quest Tracerball £25
- Mouse Mat (Red, Green or Blue) £3
- Master Twin ROM Cartridge £9
- Master Quad ROM Cartridge £14
- Data Duck £14
- Power Duck £8

Spare Parts

Archimedes Spares

- Archimedes Replacement Keyboard £98
- A3000 Replacement Keyboard £35
- A3000/A400 Floppy Disc Drive £59
- A5000 Floppy Disc Drive £69
- ARM2 CPU £19
- MEMC1A memory controller £25
- VIDC video controller £39
- IOC input/output controller £35
- Arc keyboard controller £29
- A3000 Power Supply Unit £59
- A300/A400 Power Supply Unit £89
- Fan Filter £4
- Disc Drive Eject Button £2

BBC/Master Spares

- BBC Keyboard £46
- Master 128 Keyboard £62
- BBC B Power Supply unit £59
- Master 128 Power Supply unit £69
- Keyswitches £1.50
- UHF Modulator £4
- Master 128 Battery Pack £5

Cables

Monitor Cables

- BBC to Philips 8833 (6pin - 8pin) £3.50
- BBC to Microvitec (6pin - 6pin) £3.50
- BBC to SCART lead £7.50
- BBC to Phono lead £2.50
- BBC to UHF TV lead £2.50
- Arc to Philips 8833 Mk2 (9pin - 9pin) £7.50
- Arc to SCART Stereo lead £9.50
- A3010 to Philips Mk2 (15pin - 9pin) £7.50
- A3010 to SCART Stereo lead £9.50
- Arc to VGA Monitor adaptor £12.00
- 15pin VGA to 15pin VGA lead £12.00
- 15pin VGA Extension lead £

Printer Cables

- BBC Parallel Printer cable - 4ft £5.00
- BBC Parallel Printer cable - 6ft £6.00
- PC/Archi Parallel Printer cable - 2m £5.00
- PC/Archi Parallel Printer cable - 5m £9.00
- PC/Archi Parallel Printer cable - 10m £13.00
- 25 'D' male to 25 'D' male cable - 2m £5.00
- 25 'D' male to 25 'D' male cable - 5m £10.00
- Centronics Double Ended cable - 4ft £5.00
- Centronics Double Ended cable - 6ft £6.00
- Centronics Double Ended cable - 5m £10.00

Disc Drive Cables

- Single BBC Disc Drive Data lead £4.00
- Dual BBC Disc Drive Data lead £6.00
- Single BBC Disc Drive PSU lead £3.00
- Dual BBC Disc Drive PSU lead £4.00
- Data Duck - connect 2 drives £14.00
- Power Duck - connect 2 drives £8.00

BeeB PC

Allows PC compatible computers to convert BBC BASIC programs to PC BASIC.

£38

Monitor Stands

- Single stand for BBC B/Master £14
- Double stand for BBC B/Master £27
- A3000 stand £15

BeeB DOS

Allows PC compatible computers to read BBC and Archimedes format discs.

£39

Disc Storage Units

- M35 - Holds 50 5.25" discs £4.95
- M85 - Holds 100 5.25" discs £6.95
- M25 - Holds 25 3.5" discs £4.95
- M40 - Holds 40 3.5" discs £6.50
- M80 - Holds 80 3.5" discs £6.99
- DLC1 - Holds 5 x 3.5" discs £1.50
- DLC2 - Holds 10 x 3.5" discs £1.90
- DLC3 - Holds 5 x 5.25" discs £1.60
- DLC4 - Holds 10 x 5.25" discs £2.00

3M Branded Discs

- 10 x 5.25" S/S D/D 40T (744) £5
- 10 x 5.25" D/S D/D 40T (745) £5
- 10 x 5.25" S/S D/D 80T (746) £6
- 10 x 5.25" D/S D/D 80T (747) £6
- 10 x 5.25" D/S H/D 1.6Mb £8
- 10 x 3.5" D/S D/D £6
- 10 x 3.5" D/S D/D Formatted £7
- 10 x 3.5" D/S H/D £10
- 10 x 3.5" D/S H/D Formatted £11

Disc Albums

- DW1 - Holds 6 x 3.5" discs £2.50
- DW2 - Holds 6 x 5.25" discs £3.00
- DW3 - Holds 20 x 5.25" discs £3.50
- DW4 - Holds 40 x 3.5"/5.25" discs £4.50

Cleaning Kits

- 5.25" Disc Cleaning Kit £4
- 3.5" Disc Cleaning Kit £4
- PC Cleaning Kit £7
- Professional PC Cleaning Kit £12
- Mouse Cleaning Kit £3
- Aerosol Dust Spray £3
- Servisol foam Cleaner £3
- Anti-static Spray £3

Disc Filing Systems

- Watford DDFS MKII Kit £39
- Acorn 1772 DFS Kit £49
- Watford DFS Kit £45
- Acorn DNFS ROM £17
- Acorn ADFS ROM £25
- Disc Filling System Manual £6.95

- **All prices are exclusive of VAT.**
- **Official orders welcome from Schools, colleges etc.**
- **Mail order enquiries Mon-Fri only.**

Carriage Charges:

	1st Item	2nd Item
Software	£6.00	£2.00
Hardware	£7.00	£5.00
Laser Printers	£9.00	£7.00
Accessories	£5.00	£2.00
Small Items	£4.00	£2.00

Many software items qualify for small item tariff.

For **Next Working Day** service simply double the cost.

Terms and Conditions:
Offers and all items are subject to availability. Prices may have to change for reasons beyond our control. Specifications and prices are correct at time of going to press, but may change without notice. Please check suitability of peripherals before ordering. All trademarks are duly acknowledged. Goods are sold as per our standard terms and conditions, and are available on request. Goods are not sold on trial basis. E&OE.

Watford Electronics Ltd

24hr Credit Card Order Line

Access VISA AMERICAN EXPRESS

Tel: 0582 745555 or 0582 487777

Mail Order & Showroom:
Jessa House, Finway, Dallow Road, LUTON, LU1 1TR.
Tel: 0582 487777. Fax: 0582 488588

Showroom only:
Jessa House, 250 Lower High Street, WATFORD, WD1 2AN.
Tel: 0923 237774. Fax: 0923 233642

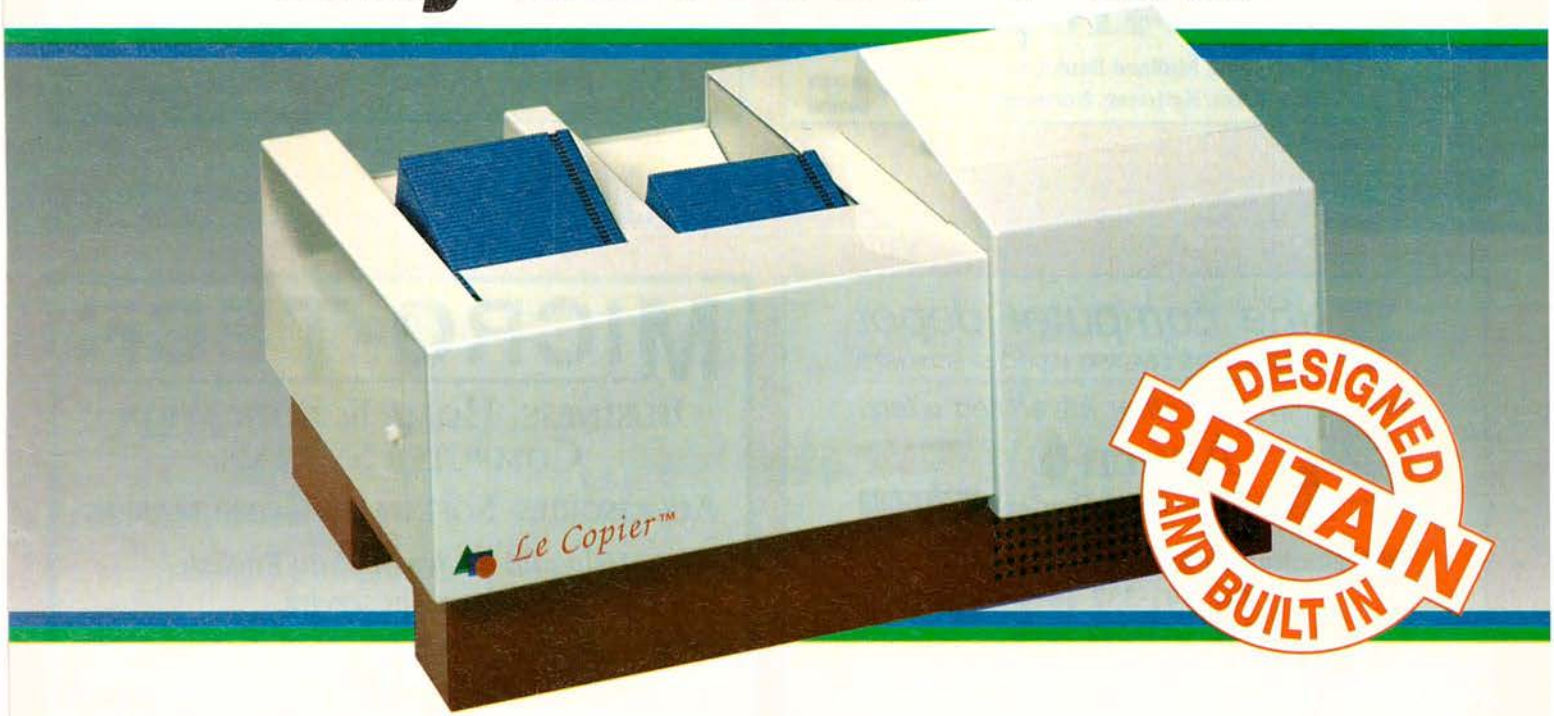
Le Copier™

The Diskette Handling Device

from

Boland

Only £995.00 + VAT



- Includes MS-DOS Copying Software
- Virus scanning, formatting etc
- All cables for connection to IBM functions compatible 286
- Compatible with 286 PCs and above, plus ARCHIMEDES
- Upgrades available for double speed copying
- Dual density 3.50" disk drive installed
- Supports 1, 2 and 4 MB
- 50 disk input and output
- Lease terms available (subject to status)
- ARCHIMEDES copying software available
- Full maintenance and aftersales service

CALL 0582 745555 OR FAX 0582 488588

Watford Electronics Limited

Jessa House, 1 Finway, Dallow Road, Luton, LU1 1TR

All Trademarks & Copyrights acknowledged

Acorn COMPUTING guide to local dealers

NORTHANTS

Kettering Computer Centre

NORTHANTS LARGEST ACORN DEALER

Extensive range of software, peripherals and upgrades

Special needs and educational orders welcome.

Please call us to discuss all your Acorn requirements

0536 410070

Allbury Ltd, Midland Bank Chambers,
15/17 High Street, Kettering, Northants NN16 8ST

BIRMINGHAM

DACO SYSTEMS

459-463 Warwick Road, Tyseley,
Birmingham B11 2JP

Your Birmingham & Solihull Acorn Dealer

• Special Needs • Business •
• Education • Home Use •

Now open Saturday 9.30am till 1pm

Tel: 021-706 8933

SCOTLAND

the computer depot

SCOTLAND'S LEADING MICRO SPECIALISTS

We match most other advertised offers.

Acorn Educational Dealer

Commodore · ATARI · AMSTRAD · CITIZEN

205 Buchanan Street, Glasgow G1 2JZ
Tel: 041-332 3944
Fax: 041-332 0560

Workshop Direct Line Tel: 041-332 0625

Mail Order Service

LANCASHIRE

MICRO-TECH

BUSINESS, HOME & EDUCATION COMPUTER SYSTEMS

ACCESSORIES SOFTWARE CONSUMABLES

Help and advice in plain English,
After sales service.

061-797 6419

286-288 Walshaw Road, Bury BL8 1PY

WEST YORKSHIRE

Davyn Computer Services

For the best service in Yorkshire (we think) CALL US!
For A3000, A4000, A5000 Series, A4 Portable & Acorn Pocket Book
Visit our showroom
Open Mon-Sat 9.30 - 7.30

Tel (0924) 254800

Printer & Ribbon Sales
Expert Advice & After Sales Service
Service & Repairs to All Equipment
Full Range of Acorn Hardware & Software
(We operate the Acorn Finance Schemes)
Full Range of Educational Software in stock & on DEMO

The 'Workshop', off Princess St, Sandal, Wakefield, West Yorks, WF1 5NY

Acorn SQuirreL CITIZEN Calligraphy

DERBYSHIRE

We are Derby's Specialist Dealer for

Acorn Computers

Sound Practical Advice - Demonstrations Daytime, Evenings and Weekends

Memory Upgrades - Hard Disc Drives - Printers - Scanners - Software

Academic's - Teacher's - Student's Purchase Scheme - Mail Order Available

0% and Low Cost Finance Terms Available (Subject to Status)

Telephone Hot Line Technical Support - Spares and Repairs - Home Tuition

High Definition Mono Scanning and Mono & Colour Printing Service Available

Acorn Approved Dealership

SELECTIVE COMPUTER SERVICES

Telephone and FAX (0332) 690691

8 Oldgate Avenue, Weston-On-Trent, Derbyshire DE72 2BZ

WALES

Acorn Replay UNIQUEway

THE OFFICIAL ACORN REPLAY COMPRESSION CENTRE
Authorised Acorn Dealer and Value Added Reseller, Multi-media Video and DTP are our speciality. A5000, A4, A3010, LaserDirect and CD-ROM systems always on display. RISC OS 3.1 upgrades available NOW! Full range of games and software on display.

Technical Support - Home Demonstrations
Telephone Sales

42 Crwys Road,
Cardiff, CF2 4NN
Tel 0222-644611 Fax 644622

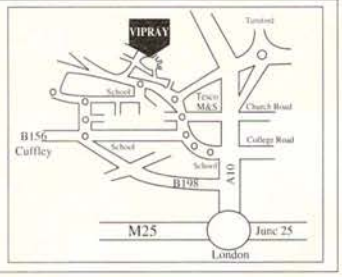
VISA
Access

HERTFORDSHIRE

VIPRAY Computer Supplies
3 Miles from J25 on the M25
3 Spicersfield, Cheshunt, Herts. EN7 6BQ. Tel 0992 625640 (24 Hrs)

The Friendly Acorn Dealer

Educational & Desktop Publishing Specialists



Access
VISA

WEST MIDLANDS

HONORMEAD SOFTWARE

ACORN EDUCATION DEALERS & NETWORK SPECIALISTS FOR THE EAST MIDLANDS

We specialise in Acorn Computer
Solutions for EDUCATION, SPECIAL NEEDS and HOME USER
We offer:- ● NETWORK CONSULTANCY/INSTALLATION ● TRAINING COURSES ● REPAIRS AND MAINTENANCE ● UPGRADES (FITTED FREE) ● INSET SUPPORT ● FREE ACCESS TO SOFTWARE LIBRARY Plus lots more.

0% Finance Available (Subject to Status) Written quotations on request

Please call us to discuss your Acorn computing requirements and arrange a free demonstration/consultancy or better still visit our fully equipped showroom to see the full range of Acorn Computers, CD ROM, Software and games.

Access VISA

THE GRANGE, HOSPITAL LANE,
MICKLEOVER, DERBY DE3 5DR
Tel: (0332) 512848/510951

OPENING TIMES
Mon-Fri 8a.m. - 5p.m.
Sat 10a.m. - 4p.m.

KENT

We are fully qualified ACORN EDUCATIONAL DEALERS

THE DATA STORE

Whether you want the latest game, advice on what to buy, technical or programming information, repairs, spares, or just a pleasant chat about what's new , you'll always be welcome to drop in to see us. You never know, you might spot something unusual amongst our full range of peripherals and software for all Acorn computers. But if you're too far away, why not try our mail-order service? After all, we're celebrating our tenth anniversary this year, so you'd might as well make use of our experience!

6 CHATTERTON ROAD,
BROMLEY, KENT BR2 9QN
Tel: 081-460 8991 Fax: 081-313 0400

To reach your local customer – Call Emma on 0625 878888 – Now!

I, Morph

Mike Goldberg takes another step into the world of DIY morphing

ONCE more it's metamorphing time – they say a change is as good as a rest – only this time, instead of altering outline shapes as in the June '93 issue, I've progressed on to solids.

This month's program shows how to change sprites in a similar way to true morphing but without the very clever directional and colour changes employed in the commercial packages. Anyhow, despite the limitations, the results can be quite satisfying – you're never quite sure how the animation is going to look.

The idea for this came from playing shoot-'em-ups where various power-ups are collected to enhance the fire power of your spacecraft. Instead of bolting on more hardware perhaps the ship could morph into a better equipped one and keep on morphing for each successive upgrade in firepower.

Instead of multi-directional pixel exchanging I have stuck to swapping pixels in just four directions. Figure I shows the start image A and end image B. The third image C – a copy of image A – is the sprite that will be operated on.

Load in the program NewMorph! and run it. First you will be asked if you want to save the sprites; say no for now – it's only something you will want to do when completely happy with the animated sequence. The example below morphs a reasonably happy person into one having a bit of a nightmare. Writing the program had the same effect on me.

Here's how it works

It's all done by looking at the end image B and altering relative pixels on C. By working towards the centre of sprite B from the outside, the program looks for black or background pixels and plots black pixels in the same locations on image C.

At the same time, working from the centre outwards, the program looks at the pixels that are NOT background in image B and plots them in the same place in image C. There you are – clear as mud.

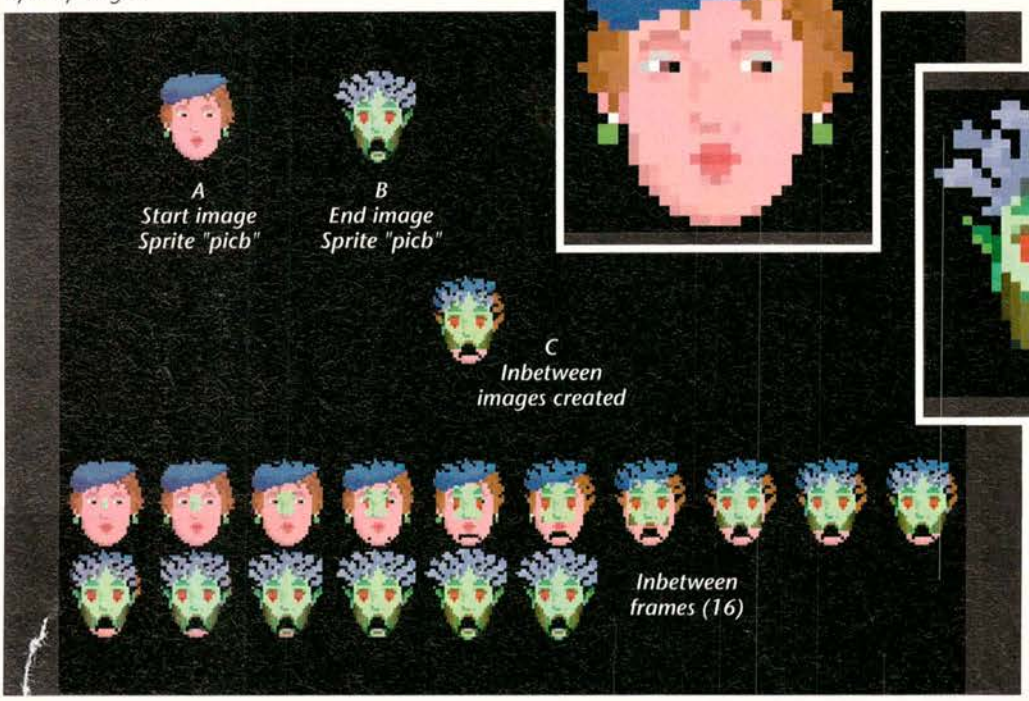
Take a look at Figure II to help clarify what I'm on about. In essence, the background of the end image is plotted over the start image from the border to the centre while the actual end image emerges from the centre outwards.

Due to the rectangular nature of the plotting, sprites with a solid block of pixels in the middle don't morph as magically as very odd shapes – you can see how it's done. But try two very different sprites and the animation looks very liquid and convincing.

This will be true of any kind of morphing program – some images will work better than others, but it's hard to put your finger on quite why.

Altering the speed of the transition has an effect too–too slow and you will always see what you shouldn't. But too fast and you miss the fun (like a lot of things in life, really). Experimenting showed me that it is best to keep a lot of background or black pixels in the sprites for maximum effect.

You can see the result of that day's experiment with the example program provided called



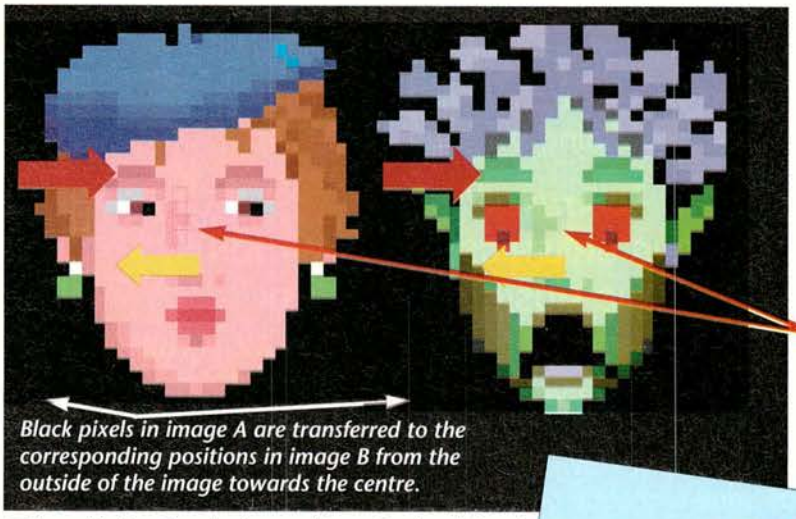
● *Figure I: Morphing by easy stages*

MorfShips. Pilot a spaceship about the screen and when you get the urge press Return to watch it morph into its next incarnation.

In all there are four transitions and a morph back to the original shape. This is followed by a pause as the program inexpertly resets itself, as this is an example of morphing, not programming.

To help matters you can toggle between sizes 1, 2 and 3 for the ship to help see what is going on. This not only illuminates the pixel exchanges but reminds you why shoving scaled sprites around is not an overly impressive thing to do.

However, be honest, the morphing from one ship to another is fun at the very least and I personally could not help providing my own live, audio accompaniment to the transition each time – easier than sampled sound.



● *Figure II: How the simple morphing effect is achieved*

Step by step

So, what can you do with this morphing program? Quite a bit actually and it's simple to use – except one tiny tedious bit – more on that later. Before you start it would be a good idea to save all the morphing programs to a separate disk as otherwise the example spritefile will be copied over when you create your own.

The sprites have to be 32 by 32 pixels, Mode 13 with no mask which translates to 128 by 128 screen coordinates when back in the land of Basic. Create your first image and call it *PicA*. Now the second image and call it *PicB* though sprite names are always lower case so it'll be converted to *pica* and *picb*. When you are happy with the two sprites save the spritefile and call it *MorfFile*.

Now double-click *Here!* and then the program *NewMorph!* again saying no to the prompt to save the sprites – you want a chance to see what's going on first. Anyway, the two images morph quite slowly as everything is being worked out.

Meanwhile a snapshot of all the 16 in-between images are placed along the lower half of the screen. This allows for a continuous replay of the animation forwards and reverse in an endless loop. Press any key to speed up a little.

By now you can see what you might wish to alter back in !Paint or then again you might not – it's surprising what is effective and what is not. When finally happy with your two sprites run the program again and this time say yes to the saving sprites question. This automatically saves each in-between image as a sprite file each with the prefix *MORF-* plus a successive number.

Now I am not completely happy about this, the saving bit I mean. What I really wanted to do was save each sprite with an incrementing suffix but to the SAME sprite file!

Each of the sprites saved in the *MORF-n* sprite files are all called Screendump. So to create my example Morfships, I had to laboriously copy each sprite to the MorfFile and alter each name in turn, not a very clever thing to have to do. But can this be done from Basic?

There now follows an appeal on behalf of the Laborious Party: Now, either I have led a very sheltered life, or yet again this is one of those enormous holes in my knowledge yawning wide. Anyone wishing to fill this void with their expertise and overcome this irksome state of affairs please write in and let me know.

The person with the easiest solution will receive an original cartoon from yours truly. By the way, I once again got out the 10 stone of manuals I have for my A310 but I've put them back propping the door open again where they are of some use.

Wasn't life simpler with the BBC B? No, please, don't answer *that* one.

● *Figure III: Can you change this into this, then this, and this and back again? You won't even see the join!*

WARLOCKS

A massive new arcade game that stands head and shoulders above all so called "competition"

WARLOCKS pushes the Archimedes to new levels of excellence, redefining the state of the Art

FEATURES:

- **BREATHTAKING GRAPHICS and ANIMATION**
- **ATMOSPHERIC MUSIC and SOUNDFX**
- **FOR THE FIRST TIME EVER 256 colour PARALLAX scrolling running at 50 cycles per second**

WARLOCKS is ONLY available from NETWORK 23

To order your copy send a cheque or postal order for £29.99 inc. VAT & P&P, (Overseas add £5.00 for P&P) to:

NETWORK 23, 73 SYLVAN AVENUE, EAST COWES, ISLE OF WIGHT, PO32 6SJ. Telephone: 0983 290347

NETWORK 23

Prophet 4 ACCOUNTS

'The leader of the pack because of its ease of use, comprehensive nature and high RiscOS factor. A well thought out and well supported program. Recommended' - Arc World, July 1993.

All the other Acorn magazines have also given Prophet top class reviews, but the people who really know how good Prophet is are its users (who are not without a sense of humour!).

The following extract is from a recent letter: 'Just returning Prophet V1.29 for upgrading in due course. Its getting better all the time...if you could get it to go out and take photographs for me while I go windsurfing I think that should probably do it!" - E Williams, Photographer.

Compared to other accounting programs Prophet is a breath of fresh air.

You can use as much or as little of Prophet's extensive features as you need - from simply entering your income and payments - to stock control and invoicing, even calculating your balance sheet and tax liability.

All your data is kept in a single file for the **whole year** which means that you can **edit all of your entries** and **produce reports** on any aspect of your accounts for any period **any time you like**.

You can also run as many different sets of accounts on it as you wish and if you're VAT registered Prophet also caters for the Cash Accounting scheme and many of the retail VAT schemes - it is also accepted by HM Customs & Excise for VAT purposes.

Other features include **Automatic Standing Orders**, Multiple Bank/Cash accounts, Stock Control, Invoicing, Statements, Purchase Orders, Credit & Delivery Notes (**all of which** are user-definable in Prophet's own DTP windows), Labels, Mail Merging and exporting of data to all the other popular RiscOS packages.

Prophet is fully multi tasking and compliant with all versions of RiscOS. It will run on any Acorn 32 bit computer with a minimum of 2mb of memory.

Prophet costs £199.75 inc VAT. An entry level version is available for £10. **This includes the save option** - any files created will load directly into the full version and the cost is refundable on full purchase so your work wont be wasted.

The entry level version is now included in Acorn's new Home Office pack.

And now..!Shares

A fully multi tasking stocks & shares program with everything you would expect **except** the price..just £39.95 inclusive.

!Shares features easy entering and editing of your data, multiple portfolios, graphs and much more. Please send for the free demonstration disc or order direct from Apricote Studios.

The current version of Prophet has a myriad of extra features based on user feedback and this combined with our policy of **free upgrades** ensure that Prophet will always remain the number one choice for small business accounts software on the Archimedes.There are over 600 Prophet users which include Acorn dealers such as: 4Mation, EFF, Stallion, Spacetech, Davyn, Arm-Tech, Topologika.....

VISA

Apricote Studios, 2 Purls Bridge Farm, Manea, Cambs, PE15 0ND. Tel: 0354 680432

Access

Unlimited drawfiles from Basic

Steve Bruntlett looks at improving your production

THE first version of this program was not Wimp-based but showed there were people using Acorn machines as a professional tool, writing their own programs rather than relying on software houses to provide all the answers.

The original version was produced so that engineers, for example, could produce drawfiles directly from Basic programs without needing to understand the inner workings of the Wimp system or the structure of drawfiles.

This second version is faster, includes the use of outline fonts and it multi-tasks. It can produce multiple drawfiles from a single Basic program and also handles sprite and CSV data.

DrawAid2 comes on a single disk with a clearly printed A4 instruction and reference manual. The disk is divided into a number of directories which hold examples of CSV and sprite files, extensive notes for the use of DrawAid2, 52 example programs, an eight section tutorial plus programs to help you work on the desktop.

The manual has clear instructions, an illustrated demonstration program, an explanatory section on the program format, a description of the range of standard objects used by the application, sections on using text, path, user, sprite and CSV objects.

What strikes me is how well cross-referenced the whole thing is to the example programs on the disk so you can see exactly what the author is referring to.

There are many other information sections, not least of which is the tutorial section. This explains and illustrates what procedures are needed to draw a circle, a circle of holes, drilling and bolting a flange to produce a complex drawfile which is not only accurate but infinitely editable without having to produce the thing from scratch in a CAD package.

Bolted flanges don't get everyone excited so there's an example by which a complex piece of shaded text can be produced. The package has many applications for the home user and many aspects of education as well as engineers.

It can be set to work in millimetres or other preferred units and can define any of 16 million colours. It works with RISC OS 2 and 3.1 versions of Draw as well as DrawPlus and with Vector, which I used.

So what does this mean? If, for example, you are producing a drawing which needs a range of cogs with different numbers of teeth, producing these would need some time with a reasonably advanced CAD package. Using DrawAid2 you could produce as many differently sized cogs as you wanted by editing the Basic program provided on the application disk.

The many programs allow you to produce a wide range of airfoils, arrows, axes, wheels, bushes, circles, frames, gears, mirrors, quadrants, rings, sprockets ad infinitum. In other words a massive kit of construction parts. But that's not all.

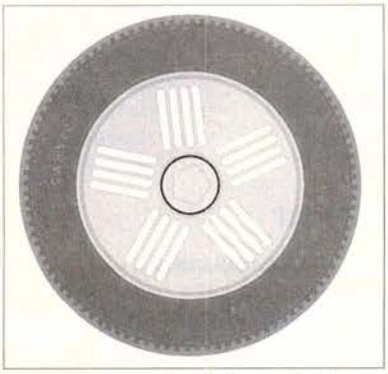
DrawAid2 can be used to produce barcodes, plaques, graphs, charts, fancy fonts, geometric and abstract designs, compass plates and so on. If you've ever tried to produce accurate tables of information or accurate mathematical curves or sine waves – DrawAid2 can handle them.

Table construction can be speeded up considerably too by using the ability of DrawAid2 to handle CSV files.

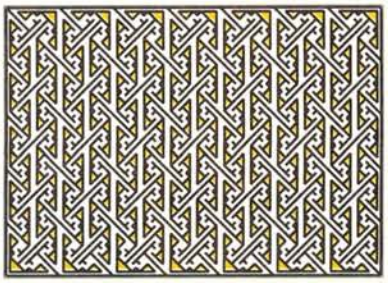
What's the catch? Well you have to write a program, but don't let that put you off. You should be able to use the worked examples to understand some of the principles and once you've got your brain thinking in a logical fashion you should be able to move on to more complex drawfile objects.

Alternatively you can edit the wide range of examples provided with the application. Have a look at the Celtic key pattern, it's quite exquisite and something I shall certainly be experimenting with in the future until someone releases a Celtic pattern generator.

Included is an example of a fireplace constructed from Basic using sprites of a Delft tile, also shows some of the application's uses as an art and design tool.



● *A car tyre produced from a Basic program...*



● *...or opt for a Celtic key pattern*

PRODUCT SPOTLIGHT

Product: DrawAid2
Price: £12 (upgrade £6) inc VAT
Supplier: CARVIC Manufacturing, Moray Park, Findhorn Road, Forres IV36 0TP.
Tel: 0309 672793

Summing up

The whole package is well thought out and is fascinating to explore and use. It's worth buying just for accurate production of shaded or drop shadow text in a specified font or to be able to generate plaques and labels for books or boxes.

This is an extremely useful package for anyone using drawing applications and if you think it's going to cost an arm and a leg – think again.

DropShadow

● *The drop shadow is one of the available accurate font effects*

ABOVE ALL . . .
WE OFFER A SERVICE BACKED BY 11 YEARS EXPERIENCE!!

JUST LOOK AT THESE SPECIAL OFFERS

HARD DISK UPGRADE OFFER

Complete SCSI Internal Hard Disk Upgrade
To 170Mb With 16 Bit
Interface And CD Rom Support
Other Systems Available
Call for Details

Only £299 +VAT

A4000 Learning Curve

Plus
Multiscan Monitor

£899 +VAT

Acorn Computers Action Pack

Upgraded to 2 Meg
(Includes Free Mouse Mat)

£339 +VAT

Please call for further advice on any products. Prices exclude VAT but include UK delivery. Subject to availability. E&OE.

ENTERPRISE
Business Software

. . . a range of high quality business software

"I can strongly recommend P.R.E.S. Ltd for their efficient, personal, honest and considerate service. Not just on one occasion, but on all the occasions I have deal with them"

The 'MICRO-TRADER' Business System

Do not be misled about 'accounts jargon' – Double Entry book-keeping is the only professional way of managing accounts. Ask an accountant!

"It is an established practice that... alterations cannot be made without a full record being shown..." Archive Magazine

"Micro-Trader really could make a difference to a business... it will make your business easier to run..." Computer Shopper August '92

Micro Trader offers ease of use with its modular system, it can be customised to suit particular requirements such as invoice layouts, reports, exporting data to DTP & spreadsheets, etc etc.

"...the user interface is a joy to use... Powerful double-entry accounts program, easy to use & very well documented. Suitable for any small to medium sized business" Archimedes World November '93

"It is powerful, flexible and certainly a pleasure to use" Acorn User June 92

Don't take our word – see & try it for yourself; call for a FREE demo disc (modules from £79)

NEW NEW

ProjectING

The Project Manager

For the first time on Acorn computers a fully featured Project Management system. Developed in association with Acorn to provide a truly professional solution to planning. Facilities include Interactive Network Graphics, plan print-outs, **Critical Path Analysis,** resourcing & full reporting. Also available –

PlanING

The Plan Designer

Already Recommended to Secondary Schools to fulfil National Curriculum requirements

Call for further details & a demo disc

PRES LTD

PO Box 319, Lightwater, Surrey, GU18 5PW

Tel. 0276 472046
Fax 0276 451427

Access VISA

UNRIVALLED EXPERIENCE . . . UNRIVALLED SERVICE

A professional impact

Does the new version if Impact deserve the professional tag? John Allen investigates

IMPACT-PRO is the successor to Circle Software's basic database, Impact, reviewed in the December 1992 issue of *Acorn Computing*. It has a host of new features and, for RISC OS 3 users, looks smarter with 3D icons in its dialogue boxes.

There are four new field types: Large real numbers, stories, calculations and sprites. These are in addition to Impact's date, real number, integer number, money, text and flag field types.

As well as having sprite fields it is also possible to use sprites as a design on each card, for a logo for example. Sprites are loaded by dragging them from an application such as !Paint as Impact-Pro cannot load sprites directly from a file.

All text is displayed in the RISC OS system font though, as outline fonts are not supported.

It seems that these days any self respecting database application must be able to tie a number of databases together. An example of a relational application might be a travel agent having a database of hotels which are related to a second database of resorts and a third one of countries.

Information about the resort, like its size and nearest airport, and currency and language information about the country, can all be shown on the card for the hotel. This saves either duplicating the information in each card or having to refer to three separate databases.

A relational card is set up by dragging fields from the export window of a secondary database into the main card. One of the fields dragged is called the *key field* and is shown in grey on the combined card. This field points to the card that contains the information for the other fields dragged from the secondary database. It is easy to use and works well.

Calculations

The new *calculation* field type allows calculations local to each card. For example a total cost can be deduced from a unit cost and quantity, or a renewal date calculated from the start date of a subscription and its duration.

It is not easy to refer to external constants. This might be required, for example, with the rate of VAT which changes from time to time. The only way to make this variable is to put it in a separate database and create a *rate* field in the main database to relate to it.

It is not possible to perform calculations on more than one card, as might be required for a grand total on a report detailing outstanding debts.

The Report mechanism has been tidied up and it is possible to export data to other applications in a more flexible way, using a field map to change the order of the fields. A new menu option allows labels to be printed directly from Impact-Pro.

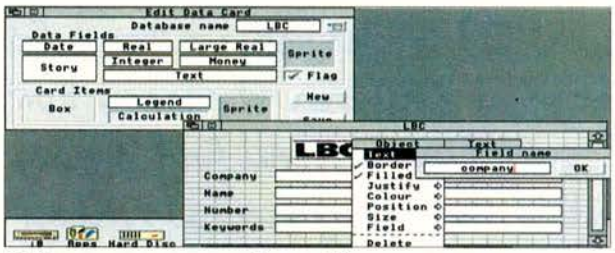
Summing up

Impact-Pro is a useful extension of the facilities of Impact. Using sprites on cards makes them look more attractive and the relational ability is useful and well implemented.

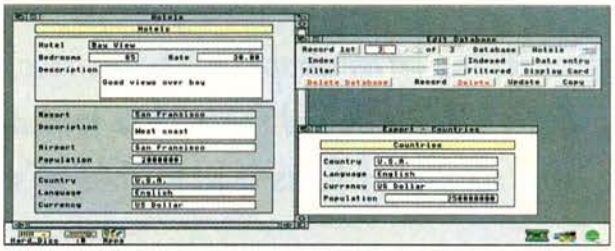
My biggest concern is that it does not close database files when their windows are closed. This means that you must quit Impact-Pro or do a proper shut-down before turning off the computer, otherwise data may be lost or corrupted.

I managed to corrupt a database when another application crashed my machine even with no Impact-Pro windows open. I also found the storage of databases within the !Impact-Pro directory unusual.

Overall this package is still excellent value for money but it does not fully live up to the expectation of its name.



● *The new appearance of Impact-Pro*

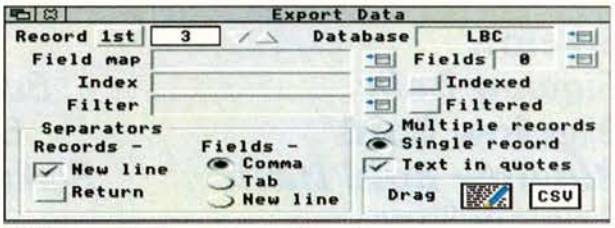


● *Impact-Pro does provide a useful relational database for the money*

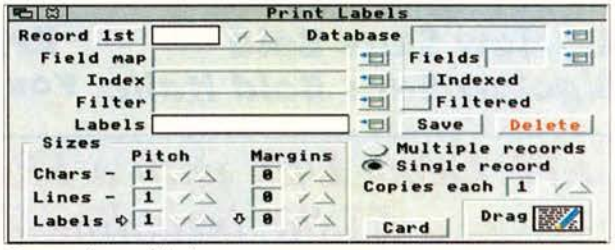
Easy set-up

Impact is an easy to use text database manager and its biggest plus is the ease of setting up a database. Icons representing the different available field types are simply dragged from a tools window to a window representing the card layout.

It uses Computer Concepts' Impulse module to produce reports, but this requires a compatible application like Impression itself.



● *The export options at your disposal ...*



● *... and your label*

PRODUCT SPOTLIGHT

Product: Impact-Pro
Price: £65
Supplier: Circle Software, 33 Restrop View, Purton, Swindon, Wiltshire SN5 9DG
Tel: 0793 770021

The Electronic Font Foundry

ELECTRONIC font FOUNDRY

New Children's fonts from EFF

EDWARD FOUR is a joined writing font designed to teach children how to write

EDWARD THREE is very similar to Edward Four but is not joined up. Children who learn how to write using the Edward Four font will find it easier to read this font rather than the joined up version.

EDWARD TWO is a font designed for advanced fast reading - although the letter shapes will be familiar to children who have used the other Edward fonts. The font deliberately resembles the modern sans-serif fonts used in children's books and magazines.

The joined Edward fonts are supplied with an easy to use translation program that will convert any text into the special joined writing format. Any text from any DTP package or wordprocessor can be used. The joined fonts are fully compatible with other fonts (such as Trinity).

	Risc OS3
Edward Two	£25.00
Edward Three	£25.00
Edward Four	£60.00

All fonts include Regular & Bold

The EFF Font Pack 40 - 40 Fonts for only £35.00 in Risc Os 3 format with Kerning tables

SAVE £350 off the rrp

Adrian
Adrian Oblique
Adrian Bold
Adrian Bold Oblique
Andante
Bigelow
Bigelow Italic
Bigelow Bold
Bigelow Bold Italic
Bigelow Sans
Bigelow Sans Italic
Bigelow Sans Bold
Bigelow Sans Bold Italic

Bodoni Poster
Bodoni Poster Italic
Britannia Light
Britannia Medium
Britannia Bold
Burke Light
Burke Light Oblique
Burke Extrabold
Burke Extrabold Oblique
Dawon
Eric Extrabold
Eric Ultrabold
FORMAL ULTRABOLD

FORMAL ULTRA ITALIC
Fortuna
Fortuna Oblique
King
King Bold
LIPA
SHARAKU
Sky
Sky Demibold
Sky Bold
Stewart
Stewart Italic
TWOMBLY

EFF Demo Disk with a FREE Outline Font for only £3.00 including VAT & Carriage

Plus samples of over 50 other great Outline Fonts, version 1.2 of our FontFinder Font Database, a massive Font poster and our new 8 page price list. (inc p&p/VAT)

How to order from EFF
All prices exclude postage and packing and VAT. Add up the cost of your order add P&P and then add VAT at 17.5%. P&P for fonts is £1.50. Handling Charge on official orders under £30.00 requiring an invoice £5.00.

The **Electronic Font Foundry**
The Studio • Gibbs House • Kennel Ride • Ascot • Berks • SL5 7NT
Tel 0344 891355 Fax 0344 891366

VISA MasterCard

The final frontier

Mike Cook wraps up his computer-guided telescope with the final construction and software

IT always surprises me that the most expensive individual component of most projects is the box you put it in. This project is no exception – closely followed by all the plugs and sockets.

I used a Vero instrument case 180x138mm with two removable aluminium end panels which can accommodate a single Euro-size prototype card. Its slim height, 40mm, makes an unobtrusive unit to use at the telescope.

I fitted a U-shaped hook to the lid to allow it to hang off the telescope tripod with the display pointing up. On the front panel I cut a hole to allow the display to be seen and also fitted the response push-button and overrun LEDs.

The displays were mounted on a small piece of Vero board set vertically to the main board on small brackets. This, along with the red filter and mounting bezel, gives the appearance that it is attached to the front panel. As mentioned last month, the displays were separated by a rectangular red LED to act as the minus sign for the right ascension.

The back panel has rather more flexibility about it. First of all you need to connect this box to the shaft encoders. I used a 6-way coiled lead like the ones you get on telephones. The connectors at each end were also similar (you can't use actual telephone leads as these are mainly 4-way).

A box and socket are mounted underneath the fork on the telescope and a socket fixed on the back of the main board. As this is not on a 0.1in pitch you have to drill some extra holes on the board and fix it on using epoxy resin. Then I cut a square hole in the back panel so that it fitted flush when assembled.

The box needs power, as does the motor drive on my telescope, so I decided to use the same sort of connector. This is the type used for powering many hand-held battery products like radios and games. I fitted two sockets both wired up together, the idea being that the power supply plugs into one and the other has a lead to feed power to the telescope.

We also need to connect the box to the computer's serial port. There was not enough room to use a standard 25 way D-type socket, so as only a few connectors are needed I used a standard 5-way DIN socket.

Finally I fitted a sub-miniature speaker on the back glued over a

SUPERIOR SOFTWARE

ACORN A3000, A3010, A3020, A4000, A5000 & ARCHIMEDES

AIR SUPREMACY

In this unique game, you can swap between air and ground/sea forces as the battle develops. Practise with the biplanes and tanks of 1918 Europe, the fighters and gunboats of the Pacific 1944, and the guided missile jets and desert tanks of the Gulf 1991. Then to 2150 and the final challenge!

£24.95 (inc VAT)

EGO: REPTON 4

Ego, the wisest of all the Repton family, now presents the cleverest and most puzzling of all the Repton games. There are a massive thirty levels of play. In each level you have to build up a jigsaw puzzle of a famous personality or place by collecting the pieces scattered around.

However, it's not quite that easy! You have to carefully manoeuvre your way around using various Conveyers and Transporters, and a lot of cunning strategy. You collect the Gems as you move around, whilst dodging the deadly Androids, but what do you do with the Towers, Trees, Grass, Mushrooms and Holes?

"Repton 4 is challenging, good value for money and well graded. What more can I say?"
...Acorn Computing (Jan. 93)

£24.95 (inc VAT)

THE LAST NINJA

You must use swords, nunchakus and shiraken stars and solve many devious puzzles in over 140 action-packed screens. From the dangerous wastelands and magnificent gardens, to the direst dungeons and the final confrontation in the Inner Sanctum of the Shogun's palace.
You cannot fail...you are The Last Ninja.

£24.95 (inc VAT)

PLAY IT AGAIN SAM 1

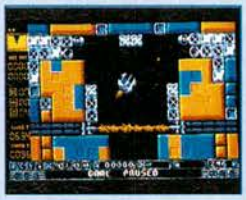
Four top quality, classic games...
...for the price of one!

Conqueror – The classic and highly realistic tank simulation game. Control up to 16 German, American or Russian tanks from World War 2. Arcade, Attrition or Strategy games.

Rotor – The widely praised strategy and action game. Manoeuvre the Rotor in 18 deadly missions into enemy fortresses. Destroy their defences as you steal ammunition.

No Excuses – Fifty levels of nerve-tingling excitement as you obliterate the grotesque aliens. Plus an easy-to-use designer to produce your own fiendish levels.

Hostages – Commando action and strategic planning as you rescue the hostages from the besieged Embassy. Realistic graphics and animation.



£24.95 (inc VAT)

TECHNODREAM

At last, the action-packed sequel which everyone has been waiting for! Now, in addition to a 1 player option, you can choose to have 2 players simultaneously. Now, in addition to horizontal parallax scrolling, there is vertical scrolling to give a much enlarged playing area.

There are 18 increasingly fiendish stages, with brilliant arcade-quality graphics and massive animated sprites, plus digitised sound effects and 6 atmospheric pieces of stereo music. Control by keyboard or joysticks (Acorn A3010 or RTFM).

"Technodream's action gets so fast and furious the screen looks like an abstract painting. A highly polished product and well worth the asking price of £25."
...BBC Acorn User (May 93)

£24.95 (inc VAT)

PLAY IT AGAIN SAM 3

Three top hits plus a great new game...
...excellent value!

Zelanites – The best *Space Invaders* game ever produced for the Arc. Superb graphics and brilliant gameplay, with lots and lots of extra features. Just sit back, and blast away!

Top Banana – The unique, highly praised "save-the-planet" game. Combining weird and wonderful graphics with state-of-the-art music and sounds. Keyboard or joystick (A3010 or RTFM).

Superior Golf – The complete golfing game for 1 to 4 players. Choice of 6 courses, plus driving range, practice green, and full feature hole and course design and editing facilities.

Letrouve – A challenging new puzzle game for 1 or 2 players. Combines the addictiveness of *Tetris* with brilliant graphics and gameplay. Control by keyboard, mouse or joysticks (A3010).

£24.95 (inc VAT)

REPTON 3 – FOUR GAME COMPILATION

Four of the most popular strategy games ever produced for Acorn computers in one great value-for-money package. **Repton 3, Around The World In 40 Screens, The Life Of Repton** and **Repton Thru Time** – with choice of four tunes and a position Save/Recall facility, plus easy-to-use screen and character design and editing facilities.

£24.95 (inc VAT)

PLAY IT AGAIN SAM 2

Zarch – The classic, programming masterpiece. Pilot your hoverplane, equipped with laser cannon, smart bombs, and homing missiles, over a massive 3-D landscape.

ArcPinball – One of the most realistic and playable pinball simulations ever produced for home computers.

Repton 2 – This brilliant, award-winning mega-game, is now at last available for Acorn 32-bit computers. Sixteen massive interlinked levels of mind-boggling logical puzzles!

Master Break – The snooker-style trivia quiz game for 1 to 4 players. Over 2000 text and picture questions.

"Four completely different challenges to keep you at the keyboard for hours, and all for the price of what just one of them would have cost. A good collection that will provide something for everyone...excellent value for money."
...Acorn Computing (Dec. 93)

£24.95 (inc VAT)

SPEECH!

Give your computer a voice with this high quality speech synthesiser, which is both easy to use and very flexible. It can directly speak words you input or text files, or you can use phonetic input to add stress/intonation, speak foreign languages or even sing! An easily modified spelling program is included.

£24.95 (inc VAT)

BBC MICRO, MASTER 128, MASTER COMPACT & ACORN ELECTRON

Please note that we have a massive range of titles available for these computers, including **ELITE, REVS + REVS 4 TRACKS, EXILE, SIM CITY, REPTON INFINITY** and 20 different compilations. Write to the address below or phone for the prices of these games and an illustrated list of all our titles for these computers.

Now available (on disc only), our latest and greatest four game compilation, **PLAY IT AGAIN SAM 18.** Featuring three classic hit games plus a new release:
Holed Out - Golf game with two full courses.
E-Type - Racing car simulation over five tracks.
Nevryon - Sideways scrolling shoot-em-up.
Citadel 2 - New 150 screen arcade adventure.

BBC Micro/Master 5¼" disc...£19.95 (inc VAT)
Master Compact 3½" disc .....£24.95 (inc VAT)

SUPERIOR SOFTWARE

(Superior Software is a trading name of Superior Microcomputing Ltd.)
Dept. M1, P.O. Box 6, Brigg, South Humberside DN20 9NH. Tel: (0652) 658585

PLEASE MAKE CHEQUES PAYABLE TO "SUPERIOR SOFTWARE."

Access VISA

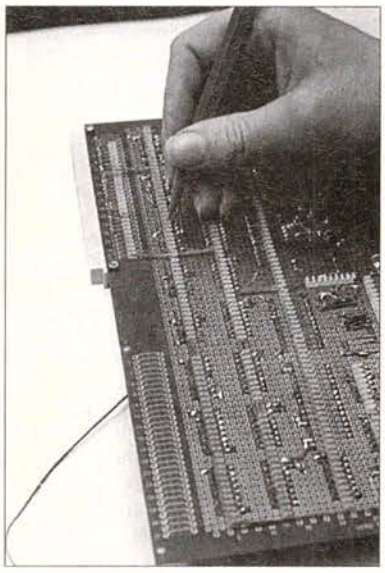
24 HOUR TELEPHONE ANSWERING SERVICE FOR ORDERS

OUR GUARANTEE
- All mail orders are despatched by first-class post within 24 hours of receipt
- Postage and packing is free
- Discs that are faulty on receipt will be replaced immediately

(This does not affect your statutory rights)

1/16in hole. You can get a better idea of the arrangement by studying the photograph. The wiring for the serial plug is shown in Figure I. Remember, however, this is only the way I made the project – there are many alternative methods.

The number of possible variations do not justify laying out a printed circuit board. Also it would be difficult to fit all the circuitry into such a small space without going to



surface-mounted components and multi-layered board.

While I was surprised and pleased by the interest shown by many people in this project at the Acorn World show I don't think there are enough to justify the cost of such a venture.

So I think that if you are interested in constructing the project your best bet is to use my method. This is using the Verowire wiring system which I have found ideal for making complex prototypes. This system uses a wiring pen with a spool of wire in the back. Wire is wrapped round the IC socket pins and lead round plastic combs to the destination IC.

This wire has a polyurethane coating so that it will not short out other wires it touches. However, when you solder it up the coating melts and a good joint is formed. You need a hot iron to melt the coating and it does release a smell, so a well ventilated room is essential.

The wire is quite thin, 0.15mm, and so is not really suitable to carry heavy currents like the power supply. Therefore I always wire up the power supply to the chips with stranded wire on the component side of the board, or in this case with the copper track on the top of the board.

The board I used is a single Euro size (100x160mm) high density prototyping board. Unfortunately their price has rocketed in recent years and they now cost about £12, however, that's better than the alternative square pad board at £22. As I said, the electronics is the least of your costs.

The secret of using the Verowire wiring system is to be very neat and only solder when you have all the connections wired up. In that way if you make a mistake in connecting up the ICs – and you will – it is relatively easy to unpick it with a fine pair of tweezers.

Work with a layout diagram showing the location of the ICs as seen from the under side of the board. Number each IC on this layout and on the circuit diagram, then follow the diagram. When I do this I mutter phrases to myself like, pin 4 on IC3 to pin 6 on IC7. After completing a connection you can mark it off by drawing a coloured line over the connection on the circuit diagram.

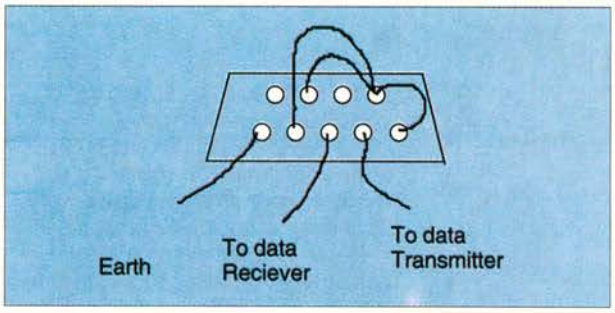
If a connection has to go to more than one place you simply loop the wire round the intermediate pin or pins and go on to the destination and snip the wire with side cutters. There is a finger control on the wiring pen so you can control the tension, producing taut wiring.

The photograph shows the basic idea and how neat you can get it. It's not practical to sell a kit of parts, but I am selling the Vero Wiring pen, board layout and full size circuit diagrams. If you have any problems getting any particular component write in to Musbury Consultants and they can get them for you.

The software

Now let's turn our attention to the software. We can use any make of Acorn computer as all models are fitted with a serial port – in fact we could use any type of computer. However, I have only had time to tackle the 32-bit machines, but those of you with 8-bit ones should be able to convert the program.

To single or multi-task, that is the question. Well in this case I have chosen to single task. True when I demonstrated this at the Acorn World show I was using a multi-tasking version of the program but that was because I didn't mind calibration being lost. You see, if the



● *Figure I: Serial socket wiring*

telescope sends a burst of data and the computer is busy on some other task the serial buffer will overflow and you will lose the relationship between the telescope angle and the numbers in your computer.

There is another point as well, if you are down at the end of the garden with your telescope why do you want the computer to multi-task anyway?

The basic purpose of this project is to provide digital setting circles, but it can also offer other facilities like finding an object, and to do this we need some sort of menu choice. At first sight this seems impossible because all we have to signal back to the computer is a single button that repeats the last code sent.

Therefore, we have no way of knowing if this indicates we want to choose a menu item or we want to move on to see the next. This problem is very neatly solved by using the movement of the telescope itself to scroll through the menu items.

I used the declination axis, as normally it is the one not being driven by a motor. Accompanying each change in menu item is a click from the speaker, which gives good feedback reinforcement. In other words it feels good to use.

The first thing we need to do is to work out how many pulses you receive for one revolution of each axis. This is best performed by fixing some terrestrial object, starting the program, rotating each axis, and seeing the raw angle. This number then has to be entered into the calibration lines at the start of the program.

Now let's get down to the difficult stuff; what calculations do we need to perform? First of all we have to convert the input stream into the numbers corresponding to the movement of each axis.
Essentially, we split each received number into two 4-bit numbers. If the most significant bit is zero we

➤

➤

add it to the accumulated total, if not we subtract the ones-complement which, in fact is the same as adding. I do this in machine code as we need to empty the buffer as quickly as possible.

However, there is the trick of converting this angle to an angle in the sky using matrix arithmetic. You can envisage the position of a star as seen by your telescope as being in the telescope's own coordinates. Likewise that same star has a position in celestial coordinates.

Therefore we have to convert between the two sets of coordinates. This can be done using matrix arithmetic and direction cosines. The direction cosine of any star can be expressed in three terms as:

```
l = cos q cos f
m = cos q sin f
n = sin q
```

where q and f are the angles used to measure the position of the star. The same star's direction cosine in celestial coordinates are:

```
L = cos d cos (a - kt )
M = cos d sin (a - kt )
N = sin d
```

where a is the right ascension, d is the declination, t the elapsed time and k a constant to convert our time to star time or sidereal time. A star's position can now be represented as a vector in each system:

$$A = \begin{bmatrix} l \\ m \\ n \end{bmatrix} \qquad B = \begin{bmatrix} L \\ M \\ N \end{bmatrix}$$

If we know the position of three stars in both coordinate systems we can then generate a transformation matrix thus:

$$T = \begin{bmatrix} l_1 & l_2 & l_3 \\ m_1 & m_2 & m_3 \\ n_1 & n_2 & n_3 \end{bmatrix} \begin{bmatrix} L_1 & L_2 & L_3 \\ M_1 & M_2 & M_3 \\ N_1 & N_2 & N_3 \end{bmatrix}^{-1}$$

So we can now convert from one system to the other using this matrix:

```
A = TB
```

or

```
B = T-1A
```

Note that *T-1* means the inverse of the matrix.

Now as luck would have it ,we do not need to know the position of three stars to generate this matrix, but only two. This is because in our coordinate system a star's position is determined by two angles – we don't care how far along the line of sight the star lies.

Therefore, we can form an artificial vector for the third in the transformation matrix by taking the vector product of the other two. Fortunately the Basic in the RISC OS machines supports some vector arithmetic – if you are converting this to the older 8-bit machines you'll have to expand the matrix operations.

The upshot is that we have to sight on two known stars, the computer notes the telescope angles and constructs the transformation matrix. Thereafter we can calculate the telescope's position simply by using this matrix.

It's better if the two reference stars are as far apart as possible in both axes, in that way the errors are minimised. Therefore, the software lets you choose two reference stars to use. I have put the data for several bright stars in the program – they are identified by their constellation and the Greek letter, this being mainly alpha, although there is the occasional beta.

Once these are chosen the calibration mode will ask you to position the telescope on each star in turn. When you have done this press the acknowledge button and you are ready to go.

Other menu options allow you to alter the brightness of the display or give a click every five seconds. I have found this useful when photographing the sky as I can get the timing of long exposures by simply counting the clicks. Looking at your watch is not so easy in the dark.

The final menu option is the find option, I have implemented this for Messier objects. These are a collection of star clusters, galaxies and nebula that the French astronomer Charles Messier recorded so they could be eliminated in his search for comets. They form the backbone of any amateur observer's viewing list and include all the most spectacular deep sky objects in the northern hemisphere.

First of all you enter the Messier number one digit at a time, using the declination movement to select each digit. Note here that Messier 1, the Crab nebula, must be selected as 01 and the first digit can go up to 11 to accommodate Messier 110, a companion galaxy to the great Andromeda galaxy.

Once the object has been selected the display changes, showing how far away this object is. You must then move your telescope so that the display shows zero, and you will then be able to see the object through the telescope. Providing, that is, that the sky is clear, you have a powerful enough telescope and it is above your horizon at the time!

Other objects could be included in this way like NGC (New General Catalogue) numbers. By the way, in this case New refers to the catalogue being composed in 1888, it was new then and the name has stuck.

One refinement I haven't fitted in the software is a planet finder. There is no reason why you can't extend it to provide this information and several public domain programs exist that can perform the calculations.

In the future I would like to tie this project to a large database of stars so that the computer displays a map of where the telescope is pointing. The ultimate surely must be to fit motors on to each drive and have the telescope swing on to a star you click on on your screen. I don't know if I will ever have the time to tackle that one, but it is eminently possible.

● *Well there you have it, thanks for following this marathon project. Next month I think we will return to something a little simpler, or as they say "something completely different".*

Body Build Pack Order Form

Body Build Pack No. 90

Vero Wiring Kit + Circuit
Wiring pen, Wire, plastic combs £12.50

Name.....

Address.....

.....

.....Post Code.....

All prices include VAT and P&P. Educational establishment orders accepted.
If you don't want to cut out the coupon then simply write what you want.

Make cheques payable to Musbury Consultants and send to:
5 Helmshore Rd, Haslingden, Rossendale, Lancs BB4 4BG.

Foreign orders add £3 if paying by Eurocheque *(for bank clearing charges).*

14

VOTED BEST AMIGA DEALER CU JAN 93

FIRST COMPUTER CENTRE

HOW TO ORDER

Order by telephone quoting your credit card number. If paying by cheque please make payable to the:

"FIRST COMPUTER CENTRE"

In any correspondence please quote a phone number & post code. Allow 5 working days cheque clearance

SHOWROOM ADDRESS:
DEPT. ACC, UNIT 3, ARMLEY PARK COURT, OFF CECIL ST, STANNINGLEY RD, LEEDS, LS12 2AE.

Prices are correct at the time of going to press. Please check our latest prices before ordering. All sales are subject to our standard terms & conditions(copy available upon request). E&OE.

DELIVERY TARIFFS

- Software standard delivery.£1.06
- 2-3 Week Days.....£2.51
- Next Week Day.....£4.21

Delivery subject to stock

- All prices exclude VAT unless otherwise stated
- 1100 sq. ft. showroom
- Free large car park
- Overseas orders welcome
- Full repair service
- Educational purchase orders welcome

OPEN 7 DAYS A WEEK

SALES & TECHNICAL

24 HOUR MAIL ORDER SERVICE

0532 319444

FAX: 0532 319191

ORDER or RETURNS ENQUIRES
TELEPHONE 0532 319444

AMERICAN EXPRESS · SWITCH · Access · VISA · MasterCard · EUROCARD

2% surcharge on Amex

SOFTWARE

Please phone for other titles if not listed

Application Software

Arc Comm Version 2.....£46.00
Arc Fax NEW!.....£25.40
Arcterm 7 NEW!.....£58.00
Artworks.....£130.00
Data Power.....£125.00
Desktop Thesaurus.....£16.98
Easiword 2.....£42.00
Genesis II.....£110.63
Graphbox V2.....£57.00
Hearsay II comms software NEW!.....£69.00
Home Accounts.....£34.03
Impression Style NEW!.....£86.00
Morpheus NEW!.....£28.00
Pendown Plus.....£67.00
Pipedream 4.....£118.28
Primeword.....£49.00
Prophet NEW!.....£144.67
Rhapsody 3 (2Mb required).....£78.00
Render Bender 2.....£75.00
Resultz NEW!.....£109.74
Talking Pendown.....£53.00
Titler.....£114.00
Wordz.....£75.00

Educational Software

Dinosaurs NEW!.....£17.00
Driving Test NEW!.....£17.00
Early Essentials NEW!.....£17.00
English NEW!.....£17.00
French NEW!.....£17.00
Fun School 5-7.....£17.00
Fun School 7-11.....£17.00
Fun School 4 less than 5.....£17.00
Junior Essentials.....£17.00
Maths (Algebra).....£17.00
Maths (Numbers).....£17.00
Maths (Statistics).....£17.00
Noddys Big Adventure NEW!.....£17.00
Noddys Playtime NEW!.....£17.00

Entertainment Software

Birds of War NEW!.....£23.82
Black Angel.....£23.82
Break 147 & Superpool.....£23.82
Carnage Inc. NEW!.....£17.86
Chopper Force.....£23.82
Crystal Maze NEW!.....£28.93
Crystal Rain Forest.....£32.33
Cyber Chess.....£23.82
Gods.....£17.86
Heimdall NEW!.....£19.00
Hero Quest.....£20.42
James Pond 2 NEW!.....£17.86
Lemmings 2(The Tribes) NEW!.....£20.00
Lotus Turbo Challenge.....£17.86
Magic Pockets NEW!.....£17.00
Man United Europe.....£17.86
Nebulus.....£17.86
Pandoras Box.....£17.00
Play it Again Sam II.....£18.68
Play it Again Sam III NEW!.....£18.68
Populous.....£20.42
Premier Manager NEW!.....£17.00
Repton 3 Compilation.....£17.00
Saloon Cars Deluxe.....£23.82
Sencible Soccer NEW!.....£17.86
Simon The Sorcerer NEW!.....£28.93
Stunt Racer 2000.....£23.82
Sylvia Layne (Exotic Adventures of)..£17.86
The Dungeon NEW!.....£23.82
The Real McCoy 2.....£21.00
The Real McCoy 3.....£21.00
The Real McCoy 4.....£24.00
Virtual Golf.....£23.82
Xenon 2.....£17.86
Zool.....£17.86

DISKS

All disks are 100% error free guaranteed

Branded disks available at discounted prices £POA

QTY	3.5"Bulk DD	OR	3.5" Bulk HD
10	£3.82		£5.40
50	£17.86		£25.56
100	£32.33		£49.32
200	£59.57		£96.64
500	£143.82		£234.00

PODULES

A3000 3 Slot & User Port.....£38.00
A3010 2 Slot & User Port.....£41.70
A3020 3 Slot & User Port.....£38.00
A4000 3 Slot & User Port.....£38.00
Analogue.....£29.00
Colour Video Out.....£49.00
MIDI.....£49.00
SCSI (Inc CDFS).....£69.00
Colour Vision Digitiser.....£79.00
Colour HiVision.....£129.00

COMPUTERS

A3010 Action Pack..£327.00
inc. Zool, StartWrite word processor, + interactive demo software: Lemmings, Chuck Rock, Superpool & Fervour. 2*HD disks, Step by Step audio cassette, & mouse

Learning Curve Pack..£593.00
inc the Acorn AKF30 monitor (see below for details of bundle)

A3020 FD.....£647.00
complete with Acorn AKF40 monitor

A3020 HD60....£768.00
complete with Acorn AKF40 monitor

A4000 HD80....£835.00
complete with Acorn AKF40 monitor

A5000 2Mb HD80..£1219.00
33 Mhz version complete with Acorn AKF18 multiscan

A5000 4Mb HD160..£1435.00
33 Mhz version complete with Acorn AKF18 multiscan

A5000 2 Mb HD40 Learning Curve
25 Mhz version without monitor.....**£725.00**

Extra Software Bundles

Learning Curve Pack.£42.55
Complete with Acorn Advance (word processor, spreadsheet, database and graphs), PC Emulator, Dr-Dos, Plus interactive demonstration software: Rhapsody II, ScoreDraw, VoxBox, Fervour, Topographer, Darryl the Dragon, smArt, Chrystal Rain Forest, Naughty Stories & ArcVenture.

Home Office Pack....£85.11
Complete with Easiwriter, DataPower, Pipedream 4, PC Emulator, Dr-Dos, plus interactive demonstration software: Prophet & Almanac

Upgrade AKF40 Monitor to
AKF18 Multiscan Add £42.55
AKF18 to AKF50 Add £63.83

We Operate Teachers Scheme
(Please call for Details)

3 Years On-site Warranty

A3010 and A3020 FD.....£42.50
A3020 HD and A4000 HD.....£51.00
A5000.....£68.00

HARD DRIVES

A300/A400/A5000 3.5" Drives

IDE Card (All Machines)..£69.00
42Mb Seagate.....£87.00
120Mb Samsung.....£143.00
170Mb Conner.....£150.00
210Mb Maxtor.....£190.00
A3000 IDE Multi-podule.....£69.00
A3000 PSU Kit.....£30.00
A3010 PSU Kit.....£30.00
A3010 IDE Multi-podule.....£71.49

2.5" Internal IDE Drives

	A3020	A3000/3010
40Mb Drive	£127.65	£196.65
60Mb Drive	£144.67	£213.67
80Mb Drive	£166.80	£235.80
120Mb Drive	£184.00	£253.00
210Mb Drive	£315.00	£384.00

MEMORY U/G

A3000 1Mb to 2Mb....£49.00
A3000 1Mb to 4Mb..£129.00
A3010 1Mb to 2Mb....£29.79
A3020/A4000 to 4Mb..£72.00
A5000 2Mb to 4Mb....£89.00

SCANNERS

Scanlight 256.....£191.48

PRINTERS

OKI · Canon · CITIZEN COMPUTER PRINTERS · SEIKOSHA · HEWLETT PACKARD · THE STAR COMPUTER PRINTERS

All our printers come with ribbon/toner, printer drivers (if available), paper & cables!

CANON

Canon BJ10sx.....£170.20
Laser quality output. Large buffer

Canon BJ200.....£259.57
3 page a min speed, 360 dpi, small footprint & 80 page sheetfeeder

Canon BJ230.....£306.37
wide carriage version of above

Canon BJ300.....£357.44
Desktop bubble jet with laser quality

Canon BJC600 Col....£489.35
new bubble jet from Canon

CITIZEN

Citizen printers have a 2 year guarantee

Swift 90 Colour.....£144.67
Excellent value 9 pin colour. Highly recommended

Swift 200 Colour.....£174.46
Same out put as the 240 but with less facilities

Swift 240 Colour.....£212.76
24 pin, 240cps draft, 10 fonts, quiet mode, 240cps.

HEWLETT PACKARD

HP 510 mono.....£222.97
HP 500 Colour.....£263.82
HP 550 Colour.....£412.76
4 times faster than the HP500C!!
All HP printers have a 3 year warranty

SEIKOSHA

Seikosha SP-1900.....£106.37
Seikosha SL-95.....£251.91
Seikosha Speedjet 300.....£272.33
12 month extended warranty £10.00

STAR

Star LC20.....£113.18
180 cps draft, 45 cps NLQ, quiet mode and multi fonts, push button operation.

Star LC100 colour.....£119.14
9 pin colour, 8 fonts, 180 cps draft, 45 cps NLQ

Star LC200 colour.....£166.80
9 pin colour, 8 fonts, 225 cps draft, 45 cps NLQ, A4 landscape printing.

Star LC24-30 Col.....£195.74

Star LC24-300 Col.....£255.31
24 pin quality, 210 cps draft, 67 cps LQ, 39K buffer

Star LC24-200 colour.....£225.52
Colour version with 30K buffer expandable to 62K

Star SJ48 Bubble jet.....£175.31
Laser quality, ultra quiet, Epson compatible & portable

Star SJ144C Thermal.....£374.46
Stunning affordable colour printer. 3 PPM, low running costs

Laser Printers on-site warranty standard

HP Laserjet 4L.....£519.14
1Mb RAM, 4 ppm, small footprint

OKI 400e.....£500.00
4 page laser, mult font, 512k memory, HP emulation

Star Laserjet LS5.....£480.00
5 page laser, HP emulation, multi font, 300Dpi

PRINTER CONSUMABLES

Canon BJ10 cartridge.....£18.99
Citizen Swift mono ribbon.....£4.99
Citizen Swift Colour ribbon.....£13.99
Citizen Swift cover.....£4.99
Double life 500 cartridges.....£24.99
HP500 mono cartridges.....£14.99
Re-Ink Spray for mono ribbons.....£11.99
Star LC10/20 cover.....£4.99
Star SJ48 cartridge.....£18.99
Star SJ144 cartridge (pack of 3).....£42.99
Star SJ48/BJ10 Refill kit.....£11.99
Star SJ144 mono cartridges (3 pack).....£16.99
Star SJ144 colour cartridges (3 pack).....£16.99

FULL STOCK OF RIBBONS, COVERS AND INK REFILL CARTRIDGES ALWAYS AVAILABLE....£POA

MONITORS

Acorn AKF30/40
inc tilt & Swivell stand
only£211.91

Acorn AKF18 14" multiscan
only £254.47

Acorn AKF50 SVGA
High quality colour SVGA monitor. .28 dot pitch.
only £318.30

Sonia medium res Colour monitor
replacing the now unobtainable Philips 8833, this monitor is superior to a standard TV. Come complete with tilt & swivell stand
only £161.69

Sharp TV/Monitor
combining the higher quality of output from a monitor with the practicality of a standard TV, comes complete with full remote control facilities
only £165.95

SUPRA MODEMS

The Supra-Fax 144LC V.32 bis (14400 baud !)
Low cost version of the classic V32Bis Fax modem. Features as below but class 1 fax only and LED display
only £136.16!

The Supra-Fax Modem V.32 bis (14400 baud !)
Send & receive fax messages using fax s/w. This new modem from Supra has full 14400 baud capability. Spec includes V.32bis, V.32, V.22bis, V22, V21, MNP2-5, V.42, V42bis, Class 1 & 2 commands, 9600/14400 Group 3 Fax. Includes free modem comms s/w & cable!!
only £178.71!

FREE COMMS software!! · 5 YEAR WARRANTY!!

Supra Fax Plus.£102.12
Send & receive faxes!(needs FAX s/w) Even faster than the standard 2400 from Supra with auto dial & auto receive. 9600 bps Hayes comp. V22Bis, V42 Bis, MNP 2-5 & auto adjust to maximise transmission speeds. Includes free modem comms s/w & cable!!

Supra 2400.....£55.31
Get on line using this great value fast modem with auto dial & receive. 2400 baud Hayes comp, V22 BIS. Includes free modem comms s/w & cable!!

All Supra Modems come with a 5 year warranty

Arc Fax Software only £20.40 if bought with a modem

US ROBOTICS

PREFERRED DEALERS

Sportster 2496 +FAX.....£124.00
Sportster 14400 FAX.....£209.00
WorldPort 14400 +FAX.....£214.00
Courier HST (16.8).....£399.99
Courier V32bis Terbo+FAX.....£449.99
Courier HST/Dual 16.8 Fax..£414.00
Courier HST/Dual 16.8 Terbo Fax..£474.00

If you thought V32bis was fast try the terbo! They come with a 5 year warranty & are BABT Approved !

PACE MODEMS

MicroLin V22b FAX..£149.78
MicroLin V32b FAX..£234.04
5 year warranty and FULLY BABT Approved !!

Contex Computing

Established 1983

BANK MANAGER

Complete and versatile personal accounts program. Consistently acclaimed!
'data entry is a delight... professional...excellent product"
'impressed...ideal...easy to use'
Enter cheques and receipts. Automatic date sequencing. Reconcile statements. Search, amend and delete. Analyse expenditure. Forward cash flow forecast. Budgets. Up to 36 Bank accounts online, inter account transfers, 9999 standing orders, 99 analysis headings, unlimited postings (depending upon disk space). Reports to screen or printer. Mix foreign currencies, graphics, password, file recovery, field editing, programmable reports, Arc RAM disks, wild card analysis enquiries, sort and more.

Bank Manager £25.00

BUSINESS UTILITY

For the club accounts or small business user. Prints a "trial balance" or "P&L reports" via the programmable spreadsheet generator. Needs the Bank Manager. Saves hours of work.

Business Util Pack £12.00

TYPING TUTOR

Quickly learn to touch type. Over 90 smoothly graded lessons graduate you from the basic home keys to complete keyboard mastery. Word scan or exact key checking, targets may be revised, rhythm metronome, key click, free format options. Recommended for adult education.

Typing Tutor £15.00

SPREADSHEET MK V

Low cost, versatile spreadsheet. 26 cols by 900 (Arch) or 99 (BBC B) rows, loaded with many functions and facilities inc programmable report writer and input scripts.

Spreadsheet MK V disk £15.00

Add £1 p&p per order (Overseas £3.50). Programs suitable for all Archimedes, A3/4/5000, BBC Master, Compact and BBC B series. State computer type (eg A3000, BBC B etc) and disk type (eg 3½" or 5¼" 80 track or 5¼" 40 track)

CONTEX COMPUTING
(Ref AC), 15 Woodlands Close,
Cople, Bedford MK44 3UE

VISA Access

Tel: 0234 838347

TT Turing Tools

149 Campbell Road, Cowley
Oxford, OX4 3NX, UK
Tel. (0865) 775059

SpoilSport

RISC OS 3.x System Defense Kit

"They rename the hard disc... scramble the configuration... turn off the auto-boot... reset the system clock... do factory resets..." The solution is **SpoilSport. £30.00 inc.**

IronMask 2.1

Multi-user File Security System

'Frozen' directories or application folders are made unchangeable except by the IronMask superuser. **'Shielded'** files are made completely inaccessible except to their owners. User authentication. Failsafe encryption. The software solution for RISC OS security in school or office. **£75.00 inc. (IronMask 1.2 Personal Edition now only £49.00).**

IronMask 2.1 + SpoilSport £90.00. 10% OFF all prices for prompt payment (14 days).

Prices quoted for 1 computer. British Isles postage included. Overseas add £3.00. ☎ for educational and site prices, further information or factsheets. Allow 14 days delivery.

Acorn COMPUTING CLASSIFIEDS

● Wanted: Archimedes computer for school child. Please telephone: 0332 661497.

● A3000 with ARM 3 IDE hard disc Risc. 05 1.3 Colour monitor external. 5 1/4 drive software. £675. 031 441 2432.

● BBC B Computer Decca monitor pace disk drive Brother printer. Many games and discs. All good order, £250 O.N.O. Tel: 051 339 8417.

● BBC Master, boxed, diskdrive, lots of games, joystick, £250, O.N.O. 081 949 9202.

● Archimedes 310, colour monitor, Panasonic D.M. Printer, joystick, Flying Start 2, Pen Down, loads of great games. £550. Tel: 0959 534471.

● Acorn A3000, 2Mb. Risc OS 3, Phillips Colour Monitor. 0590 642285.

● A3020 brand new HD or FD versions, colour monitor, some games and educational software. FD version £700, HD £850 o.n.o. Tel: 081 305 0177, EUN.

● A5000 L.C. 4Mb. 40Mb HD, RISC 3.01, mint condition plus Artworks, Schema, Flexiifile and games £1200. 081 660 3797.

● A3000 2Mb 05 3.1 , STAR. LC10 Printer, Learning Curve, £600 o.n.o. Tel: 061 445 8433. After 6pm.

● BBC B Twin Drives, ROMS, software, Teletext, magazines, £100. 081 868 1841.

● A310, 1Mb RAM, RISC OS, Double Drives, Colour Monitor, a selection of educational software and Star LC10 Printer, £350 o.n.o. Tel 0569 64480 evenings.

● Epson LX800 Printer, Tractor Feed, Stand Leads, £75. Chroma Genlock for A3000 manual, £150, Hybrid music 5000 Synthesiser plus keyboard, ROM, manuals £85 BBC games 5 1/4" discs, top titles £2 each. Tel D.Parker. 0268 754112.

● BBC Master, twin 40/80 disc drive, educational software, Elite, Joysticks £200. Telephone 021 357 2052.

PLEASE PRINT THIS AD IN THE NEXT AVAILABLE ISSUE OF *ACORN COMPUTING*

Name _____

Address _____

_____

_____ Daytime Tel: _____

Cheque enclosed for £ _____
(minimum £4 for 10 words)

I certify that any software offered for sale is original and not a copy

Signed _____

POST TO: Acorn Computing Classifieds, Europa House, Adlington Park, Adlington, Macclesfield SK10 4NP

CONDITIONS

- This service is EXCLUSIVELY for the use of private readers. No trade ads will be allowed.
- To avoid encouraging software piracy, all ads will be carefully vetted before they are accepted.
- Ads can only be accepted on the form opposite (or a photocopy of it).
- There is no maximum to the number of words you include in your ad. if there is insufficient room on the form, continue on a separate sheet of paper.
- The cost is 40p per word, with a minimum of 10 words.
- **WE GUARANTEE your ad will appear in the next available issue of *Acorn Computing*.**

Painting the town

Rob Miller takes a look at the enhanced ColourCard

JUST over a year ago, Computer Concepts released their first product as a result of their partnership with hardware company Wild Vision. The ColourCard was designed to enhance the flagging graphics capability of the Acorn range of 32-bit computers, which, to be perfectly honest, hadn't changed since its launch over six years before.

When the Archimedes was first introduced back in 1987, its graphics capabilities were looked on as something bordering on revolutionary. For the majority of users who had been brought up with machines that could only manage resolutions of 320x256 with eight colours, even the *medium* resolution of Mode 12 (640x512 with 16 colours) seemed a major step forward.

Nowadays, the need for higher resolution is becoming more and more apparent. Advances in both hardware and software means that the more you can get on your screen the better.

If, for example, you're using a desktop publishing package, the necessity for as large a desktop as possible is paramount. Likewise, if you're running a spreadsheet package, being able to view multiple sections of the sheet, clearly and side-by-side is also of great use.

Since its release, the ColourCard has undergone several changes both in terms of hardware and software. A major change in hardware – which actually went unnoticed to the majority of the public – was the replacement of the INMOS chip – the graphics controller used on the card in Figure I – with a more recent version.

This allowed rendering of images in full 24-bit (16,700,000) colour in addition to the existing 16-bit limit.

Installation

The ColourCard Gold is essentially very similar to the first release, but with the addition of extra software – both in rom and on disk – to make use of its increased colour resolution. Also, a larger rom is now present on the expansion card to contain the additional software required to support a number of new 16-bit desktop modes.

Setting up the card is easier than its predecessor and just requires the installation itself. All control software is held in rom and can be configured to start up depending on what sort of monitor you have attached to your computer.

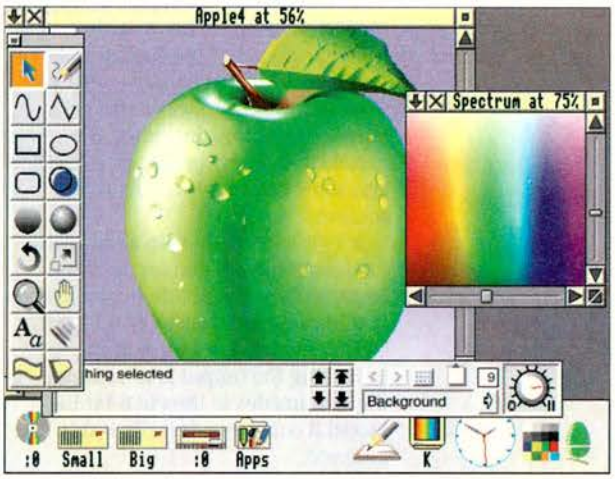
A small amount of the cmos ram is used to ensure that all settings are maintained, even after turning off the computer.

The software

In addition to the control software in rom, a utility disk is provided that includes new versions of !FlipTop and !Clearly. A further disk contains a new version of Acorn's Replay film-player software suitable for the 16-bit desktop modes.

!FlipTop makes selecting modes extremely simple and they can now be chosen by resolution and number of colours, rather than typing in a meaningless number via the palette utility.

The *k* (or thousands) column in !FlipTop now contains four new modes, the highest being 576x412 with 32,000 colours. This is the highest resolution possible as the current implementation of RISC OS imposes a maximum limit of 480k for screen memory.



● *The preview option is no longer required when using ArtWorks in 16 bpp modes*

!Clearly allows you to view Clear-format files and now includes the ability to see pictures in true 24-bit colour. Although !Clearly runs *outside* of the desktop environment, there is still a limit for screen memory – the amount of video ram present on the expansion card.

If the picture you want to view is larger than this, !Clearly attempts to use the computer's memory and/or hard disk space (if available) as a cache.

Watching Replay files on a standard Acorn 32-bit computer is impressive. On the ColourCard, particularly in the one of the new 16-bit desktop modes, it is even more so. When designing the standard for Replay files, Acorn had the foresight to allow films to contain more than the available 256 colours.

The current Replay file format will in fact cater for films with 16-bit (32,000) colour. Although there is no enhancement in resolution, the increase in the number of colours ➤

PRODUCT SPOTLIGHT

Product: ColourCard Gold
Price: £249
Supplier: Computer Concepts, Gaddesden Place, Hemel Hempstead, Herts HP2 6EX.
Tel: 0442 63933

➤

makes films much clearer and gives them a more *fluid* appearance on screen.

Monitoring the action

Before you start thinking how ColourCard might change your life, it's worth remembering that although it's likely to improve the picture quality whatever setup you have, there won't be a real difference unless you have a good, high resolution monitor.

If you consider the Acorn Multisync (AKF18) monitor to be towards the bottom end of the quality scale, you should be able to judge what will work best. The card was tested on a range of monitors, including the excellent, but very pricey, Eizo T560i and some impressive results were achieved.

It's difficult to show in a magazine the sort of quality you can achieve. Pictures alone cannot do justice to the vast improvement that ColourCard Gold provides. The best way of describing the output is to compare the Archimedes to the old 8-bit BBC Model B computer. It really is that different.

The combination of the extra resolution and number of colours means that the big monitors can be visually pushed to their limit.

What use is the 16-bit desktop?

It's all very well having thousands of colours at your disposal but what, if any, software is there around that will make use of it. Well, as a rule, any application that is vector-based – Draw, ArtWorks, Euclid and so on – should be able to take advantage of the much wider range of colours available in the new 16-bit modes.

● *Figure I: The INMOS controller chip at the heart of ColourCard Gold*

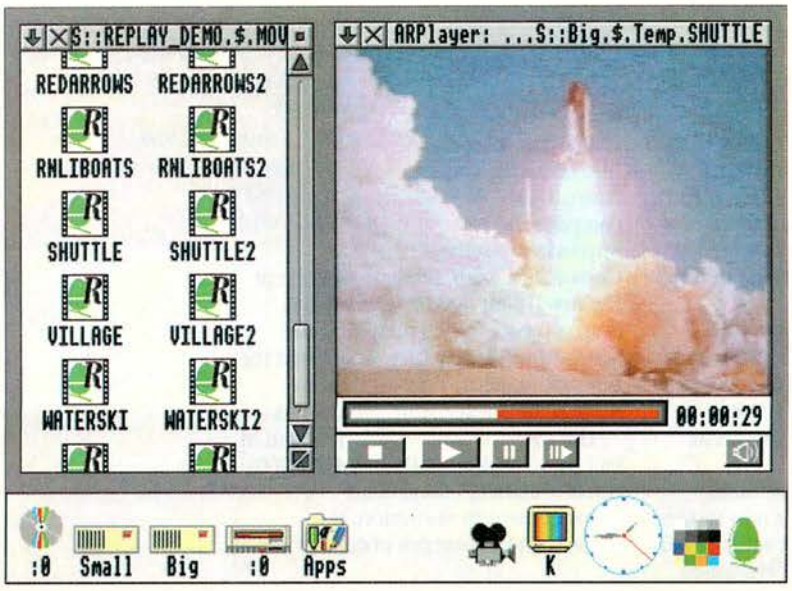
Graded fills appear smoother and previewing such pictures in a 16-bit mode is an ideal way to see how they might come out if printed professionally. ArtWorks version 1.120 onwards has a preview option built in as standard, but with the ColourCard Gold it is virtually redundant as you can now both work on and view pictures with 32,000 colours.

As well as vector-based drawing packages, there are a number of other applications that can use the additional colours. Computer Concepts' two new desktop publishing packages Impression Style and Impression Publisher are both capable of handling and displaying 24-bit vector files – Draw and ArtWorks – as well as TIFF (Tagged Image File Format) files and Acorn 16-bit/24-bit sprites.

There are no bitmap (sprite) editors around at the moment that will use the extended palette in 16-bit modes, but with Acorn's future architecture you can be rest assured that many existing ones will be upgraded.

Both Clares and Longman Logotron acknowledge the fact that new versions of ProArtisan2 and Revelation Image Pro will be vital.

Finally, PhotoCD, which is already attracting much interest on the Acorn platform, will benefit enormously from the larger resolutions and palettes achievable with ColourCard Gold. See the PhotoCD article in the August '93 issue of Acorn Computing for more information.



● *Replay films can be viewed in all their glory using the new 16 bpp modes*

Summing up

Installing the ColourCard Gold in any of the Acorn range of 32-bit computers – as long as they have a backplane fitted – is simple and requires no real expert knowledge. There is a small cable that links the card to the main circuit board but this plugs on to existing pins, so there is no soldering except on some old series 300/400 machines.

All control software is included on rom and configuring it is just a case of issuing a few simple star commands. The other software supplied on disk is both simple and informative to use and I soon found myself using !FlipTop in preference to !Palette when changing modes.

Every piece of software ran with no problems while the card was installed. A video-through option on the card automatically comes into effect when you're using a non-ColourCard Gold mode to ensure full compatibility with software such as games and other 'illegally' written programs that would otherwise have problems.

Like the original card, ColourCard Gold actually improves the performance of your computer by taking some of the workload away from the main processor. This effectively speeds up the machine and actually has a marked effect on the time taken to perform different operations, such as calculating figures in a spreadsheet.

£299 is quite a lot of money to spend on any hardware upgrade but the advantages far outweigh this. If you are a serious user and spend a lot of the time using the desktop, it could be considered an essential purchase. It is also, of course, the only way (at present) that you can get more than 256 colours on the desktop.

061 766 8423

Phone lines open :-

Mon - Fri 09.00 - 17.00
Sat 10.00 - 17.00

FAX: 061 766 8425

Acorn Hardware

A4 4/60 Mb HD Portable c/w Acorn shoulder bag	£1699.00
A5000 2Mb Ram / 80Mb HD Arm 3, Acorn Multiscan	£1275.74
A5000 Learning Curve / 2Mb Ram as above c/w software	£1318.30
A5000 Home Office / 2Mb Ram as above c/w software	£1360.85
A5000 4Mb Ram 160Mb HD Arm 3, Acorn Multiscan	£1445.96
A5000 Learning Curve 4Mb / 160Mb HD Arm 3, Acorn Multiscan	£1488.51
A5000 Home Office 4Mb / 160Mb HD Arm 3, Acorn Multiscan	£1531.06
A4000 Home Office System Arm 250, Acorn Monitor	£935.32
A4000 Home Office Multiscan System Arm 250, Acorn Multiscan	£977.87
A4000 Learning Curve System Arm 250, Acorn Monitor	£892.76
A4000 Learning Curve Multiscan System Arm 250, Acorn Multiscan	£935.31
A4000 HD 80 System Arm 250, Acorn Monitor	£850.21
A4000 HD 80 Multiscan System Arm 250, Acorn Multiscan	£892.76
A3010 Action Pack Arm 250, TV Modulator	£339.57
A3010 / 2Mb Learning Curve System Arm 250, Acorn Monitor	£637.45
A3020 / 2Mb FD System Arm 250, Acorn Monitor	£675.00
A3020 / 2Mb FD Multiscan System Arm 250, Acorn Multiscan	£717.55
A3020 / 2Mb HD 60 System Arm 250, Acorn Monitor	£825.00
A3020 / 2Mb HD 60 Multiscan System Arm 250, Acorn Multiscan	£867.55
Acorn Pocket Book Spreadsheet, W/P, D/base	£199.00

FREE

Acorn 3 Years On Site Warranty on all Acorn Systems - (excluding Acorn Purchase Schemes / Education Schemes / A4 Portable / Special Offers / Pocket Book)

Upgrades

RISC OS 3

RISC OS 3.11 Upgrade	£75.74
RISC OS 3 Hardware Kit A300	£25.00

A3000

2/4 Mb Ram	£Call
Joystick Interface	£32.00
Serial Upgrade	£19.00

A3010

2/4 Mb Ram	£Call
Joystick Emulation Software	£14.95

A3000/A3010

60 Mb Int Hard Disc	£259.00
84 Mb Int Hard Disc	£289.00
Joystick (Quickshot III)	£12.00
User & Analogue Podule	£46.00
User & Midi Podule	£46.00

A400

2/4 Mb Ram	£Call
5.25" Ext. floppy disc interface	£39.00
Dust Cover	£9.95

A3020/A4000

2-4Mb Ram	£99.00
Econet Module	£49.00
PC Card 386 1Mb	£225.00
PC Card 486 4Mb	£425.00

A5000

2-4Mb Ram Card	£85.00
4-8Mb Ram Upgrade	£399.00
Dust Cover	£12.95

A4 Portable

A4 Battery Pack	£50.00
A4 Shoulder Bag	£35.00

Cables

Arc - 15 Pin to 9 Pin Adaptors	£9.95
Arc - Monitor - 8833 inc sound	£8.65
Arc - Monitor - 8833 II inc sound	£8.65
Arc - Parallel Printer Cable	£5.00
Chocks Away / Stunt Racer (3m serial cable enabling dual play)	£9.95
Keyboard Extender 400/5000	£7.50
Mouse Extender	£7.50

Expansion Cards

Econet Module (A3000/400)	£46.00
Hawk V9 Digitiser (A400/5000)	£199.00
I/O Expansion Card (A400/5000)	£79.00
Midi Expansion Card (A400/5000)	£65.00
SCSI Card - Acorn (A400/5000)	£229.00
SCSI Card - Morley (A400/5000)	£149.00

ROMBO Colour Digitisers

A3000 inc. podule housing	£72.30
A400 / A5000	£72.30

Aleph 1/Atomwide

Arm 3 Upgrade	£129.00
386 PC Expansion Card 1Mb	£399.00
386 PC Expansion Card 4Mb	£499.00
486 PC Expansion Card 1Mb	£499.00
486 PC Expansion Card 4Mb	£585.00
Windows Drivers for above	£25.00
Parallel SCSI adaptor	£40.00
RemoteFS	£45.00

Monitors

Acorn Standard Colour AKF30/40	£199.00
Acorn Multiscan AKF18	£269.00
Acorn Multiscan AKF50	£315.00
Taxan 795 Multivision	£499.00

Printers

Canon

Bubblejet BJ-10sx	£175.00
BJ10sx inc. turbo driver	£215.00
Sheetfeeder for BJ-10ex/sx	£48.00
BJ200	£265.00
BJ200 inc. turbo driver	£299.00
BJ230	£299.00
BJ230 inc. turbo driver	£349.00
BJC600 (Colour) inc. turbo dr.	£519.00
BJC800 (Colour) inc. s/w	£1369.00

Citizen

120D+	£114.00
Swift 90 Colour	£169.00
Swift 200	£199.00
Swift 200 Colour	£225.00
Swift 240	£239.00
Swift 240 Colour	£259.00
Swift 128K Memory	£35.00

(2 Year Warranty on ALL Citizen Printers)

Hewlett-Packard

HP DeskJet 510	£239.00
HP DeskJet 310C	£279.00
HP DeskJet 550C	£399.00

Computer Concepts

Laser Direct (LBP4 Hi Res.)	£749.00
Laser Direct (LBP8 Hi Res.)	£1049.00

Scanners

Flatbed A4 256 Grey SCSI (CC)	£745.00
Flatbed A4 without SCSI card	£585.00
Scan Junior Scanner 256	£199.00
Scanlight Video 256	£220.00

Printer Drivers

Midnight Graphics

Sprite Dumps	£10.00

Swift9/90/24/240, Epson 24, HP Paintjet, Integrex 132/Colourcel, Juki 5520, Star LC10/200/24-200

Ace Computing

Printer JX (Colour Dot Matrix)	£15.00
Printer DJ (HP 500/550C & PaintJet)	£15.00
PRO Drivers (All)	£36.00

Beebug

Deskjet 500/550C Driver	£15.00
Star/Epson/Citizen (Colour)	£15.00

BBC/Master Software

Ring for Software List and Prices

Software Catalogue

Please call for our latest full catalogue

Archimedes Software

Software Site Licences - Ring for Prices

4 Mation

Chameleon	£35.00
Desktop Basic Editor	£25.00
Granny's Garden	£23.00
Poster	£75.00
Snippet	£35.00
Vector	£75.00

Ace Computing

ArcLight	£55.00
Euclid 2	£35.00
Mogul	£25.00
Splice	£34.00
Tween	£35.00

Acorn Computers

Advance	£88.00
Desktop Assembler (V 2)	£118.00
Desktop C (V 4)	£179.00
Level 4 AUN Software	£399.00
PC Emulator / Free Shareware	£92.00
TCP/IP Programers Pack	£50.00
TCP/IP Protocol Suite	£199.00

Beebug

DeskEdit 3	£24.00
Desktop Thesaurus	£18.00
Hearsay II	£69.00
Masterfile 3	£45.00
Ovation	£84.00

Clares Micro Supplies

Artisan 2	£43.00
Interdictor II	£25.00
ProArtisan 2	£109.00
Rhapsody 3	£80.00
Topographer	£63.00

Colton Software

Pipedream 3	£72.00
Pipedream 4	£97.00
FireWorkz	£145.00
Resultz	£97.00
Wordz	£77.00

Computer Concepts

ArtWorks	£124.00
Canon BJ10/200/600/800 Turbo Driver	£42.00
Compression	£34.00
Equasor	£37.00
Graphics Card	£225.00
HP 310/500/550C Turbo Driver	£42.00
Impression II Borders Disc	£12.00
Impression Business Suppliment	£34.00
Impression II	£115.00
Impression Publisher	£135.00
Impression Junior	£65.00
Impression Style	£95.00

Cygnus Software

Twin World	£14.00

Dabhand Computing

A3010 Joystick Emulation s/w	£14.95
Arc DFS	£22.00
Visual Backup	£42.51

Database Software

Fun School 2 under 6 years/6-8 years/over 8 years	£14.95
Fun School 3 under 5years/5-7 years/over 7 years	£16.95
Fun School 4 under 5 years/5-7 years/7-11 years	£18.00

Empire

Pipemania	£16.00

Electromusic Reasearch

Creations Discs 1-8 ea.	£19.00

Gamesware

James Pond 2 - Robocod	£19.00
Xenon2	£19.00

Gremlin

Zool	£19.00

Hybrid

Elite	£31.95

Icon Technology

EasiWriter 3	£115.00
StartWrite	£55.00
TechWriter 2	£159.00

Krisalis Software

Battle Chess	£21.00
Champions Collection - Leader Board / Man. United / Squash / Boxing	£22.00
Chuck Rock	£17.00
Gods	£19.00
Heimdall	£21.00
Hero Quest	£19.00
James Pond	£19.00
Krisalis Collection - Pipemania / Revelation / Mad Professor Mariarti / Terramex	£21.00
Lemmings	£19.00
Manchester United Europe	£19.00
Nebulus	£19.00
Oh No! More Lemmings	£15.00
Populous	£22.00
Sim City	£22.00
Swiv	£9.99
Turbo Challenge 2	£19.00

Leading Edge

Investigator II	£22.00
Joystick Interface (All Models)	£32.00
Desktop Tracker	£50.00

Longman Logotron

Eureka! 2	£95.00
First Logo	£22.00
Landmarks - each	£17.50

Aztec, Civil War, Columbus, Egypt, Elizabeth I, Rainforest, Victorians, World War II

Logo	£55.00
Magpie	£40.00
Notate	£49.00
Pendown Etoiles	£49.00
Pendown Plus	£68.00
Pendown Outline Fonts	£18.00
Pinpoint	£65.00
Pinpoint 2	£79.00
Pinpoint Junior	£23.00
Revelation 2	£50.00
Revelation ImagePro	£127.00
S-Base 2 Personal	£115.00
S-Base Developer	£189.00
Talking Pendown	£58.00

MicroPower

Chess 3D	£15.00
Zelanites	£15.00

Midnight Graphics

ClipArt 1 / Clipart 2 each	£29.95
Express	£29.95
Tracer	£29.95

Minerva Software

Ancestry	£59.00
Cadet	£135.00
Desktop Office 2	£65.00
Easiword 2	£45.00
Flexifile	£75.00
Graphbox	£55.00
Graphbox Professional	£104.00
Home/Club Accounts	£34.00
Linkword - Fr/Ger/Spa ea	£35.00
PrimeArt	£69.00
PrimeMover	£75.00
PrimeWord	£55.00

Oak Solutions

Draw, Print and Plot	£35.00
Genesis II	£99.00
WorraCAD	£74.00

Sherston Software

!Draw Help - Tutorial	£15.95
!Help 3 - RISC OS 3 Tutorial	£9.95
Animated Alphabet	£19.00
Animated Numbers	£19.00
Arcventure I - Romans	£25.00
Arcventure II - Egyptians	£25.00
Arcventure III - Vikings	£25.00
Badger Trails	£35.00
Christmas Allsorts	£16.00
Connections	£27.00
Dreamtime	£20.00
Farm	£19.00
Fleet Street Phantom	£23.00
Glimpse	£8.50
Graph_IT	£19.00
Hilighter	£32.00
Mapventure	£23.00
Microbugs	£25.00
Nature Park Adventure	£24.50
Naughty Stories (6) or £9.50 ea.	£48.00
Recall	£37.00
Selladore Tales	£24.00
Space Mission Mada	£23.00
Splash!	£15.00
Stig of the Dump	£22.00
Story Starts	£25.00
Teachers Cupboard	£24.50
Teddy Bears Picnic	£23.00
The Crystal Rain Forest	£35.00
The Crystal Maze	£29.00
Viewpoints	£35.00
Wizards Revenge	£17.00
Wizards Return	£17.00
Worst Witch	£21.50

SIMMIS

Flight Sim Toolkit	£27.00

Superior Software

Air Supremacy	£16.00
Play it again Sam 1 Conqueror/Rotor/No Excuses/Hostages	£19.00
Play it again Sam 2 Zarch/ArcPinball/Master Break/Repton 2	£19.00
Repton 3	£16.00
Repton 4 - EGO	£19.00
Speech!	£15.00
Superior Golf	£14.00
Technodream	£19.00
The Last Ninja	£19.00

The Data Store

FontFX / ShapeFX each	£8.95

The Fourth Dimension

Apocalypse	£14.00
Arcticulate	£18.00
Arctist	£18.00
Birds of War	£25.00
Boogie Buggy	£14.00
Break 147 / Superpool	£25.00
Black Angel	£26.00
Cataclysm	£14.00
Carnage Inc.	£19.00
Chocks Away	£18.00
Chocks Away 2 + Ext. Missions	£27.00
Chopper Force	£18.00
Demons Lair	£19.00
E-Type Compendium	£18.00
Enter The Realm	£18.00
Haunted House	£19.00
Holed Out Compendium	£18.00
Nevryon	£14.00
Pandora's Box	£18.00
Powerband	£14.00
Saloon Cars - Deluxe	£25.00
Stunt Racer 2000	£25.00
The Dungeon	£25.00
The Real McCoy 2 / 3 ea.	£23.00
The Real McCoy 4	£25.00
The Wimp Game	£14.00
Virtual Golf	£23.00
X-Fire	£16.00

Triple R Education

10 out of 10 Algebra	£17.50
10 out of 10 English	£17.50
10 out of 10 Maths	£17.50
10 out of 10 Early Essentials	£17.50

Books (No VAT)

Archimedes Assembly Language	£14.95
Archimedes Operating System	£14.95

The above books have accompanying discs add £5 for 5.25", £7 for 3.5"

C: A Dabhand Guide 3rd Edition	£16.95
A3000 Technical Guide	£29.95
Assembler Release 2	£25.00
BBC Basic Guide (Acorn)	£19.95
Budget DTP (Draw & Edit)	£12.95
DTP Seeds (4Mation)	£8.45
Desktop C Release 4	£25.00
Desktop Development UG	£25.00
Graphics on the Arm - A DHG	£14.95
First Word Plus - Dabhand Guide	£13.95
as above with disc	£21.90
Impression - Dabhand Guide	£14.95
as above with disc	£16.95
Programming in Ansi C	£14.95
RISCOS 3 PRM's	£99.00
Understanding Spreadsheets	£9.95
Wimp Programming	£14.95
as above with disc	£18.95

Hours of Opening

Monday - Friday 9.00 a.m. - 5.00 p.m.
Saturday 10.00 a.m. - 5.00 p.m.

How to find us

Important Facts

- **NO Minimum Order Value**
- **NO Carriage Charges in Mainland UK**
- **ALL Goods Despatched within 24 Hours, subject to stock levels**
- **Acorn Education Dealer**
- **Acorn Service Centre**
- **Hotline Support on all Hardware and Software purchased from us**

Terms & Conditions

TERMS: EC residents add 17.5% VAT to all prices, except books. Carriage *FREE on all items in the UK (*with the exception of "remote" areas). Foreign orders, carriage at cost. (quotations available). Access/Visa cards accepted. Dabhand Computing Ltd. is an Authorised Acorn Education Dealer. Official orders accepted from public sector/education/PLCs, otherwise cash with order. Tender invitations welcome. Callers welcome. We are 2 minutes north of J17, M62. Prices subject to change without notification. Goods offered subject to being unsold. A copy of Terms & Conditions available upon request.

Acorn Purchase Scheme

Teachers / Academics / Students Scheme (13.75% APR)
Please call Jayne Watkins for a free information pack

Please call for full catalogue - the items shown in this advert are a small selection from our vast stocks.

DABHAND COMPUTING

DABHAND COMPUTING LTD
5 Victoria Lane
Whitefield
Manchester, M25 6AL

Looking for faster boots

I USE an A440/1 with OS3.1 which is configured, on start up, to load various modules and utilities. The list of tasks includes running !Fonts and !MoreFonts, loading !Printers for a LBP4 and BJC600, configuring the cache for my ARM3, setting up a ColourCard and loading !Spark, !Menon, !Fliptop, !Executor and an iconbar clock.

I now find that this process takes almost two minutes. Can you suggest a way of speeding up the start-up procedure? – **M. H. Brooke, Berlin**

● *Well, no. If you really require all the programs you've mentioned to be available from the moment you start then that's how long it's going to take. What I do from time to time is review exactly what's being booted and decide if it's absolutely necessary, if not I take it out.*

Masking commands

I'VE just received a copy of Clem Vogler's review of my book *First Steps in Programming Acorn RISC OS Computers*. Mr Vogler mentions that the abbreviation *Cat is promised but omitted.

The minimum abbreviation for *Cat, which is *. of course, was on the bottom line of a page on my camera-ready original. I believe that it may have been inadvertently masked off by the printer. – **Martyn Fox, Windsor.**

Holding shares

PURE chance had it that I saw Clem Vogler's review on Shareholder Professional 3 in the August issue of Acorn Computing. I agree with him that being able to download share prices is an enormous asset to this program and one can only admire the foresight of the programmer for adding a learning facility to recognise the names of shares.

But I fear that the rest of the program does not live up to this high standard. In the second picture the amount invested has suddenly almost doubled to £1104.50 although the amount of shares has not changed. This certainly cannot come from the dividend paid out. And even if I accept that the total amount invested would be correct, there is absolutely no way to explain the loss of £673.42.

The third illustration gave me an insight into the graphical features and here one realises how very limited the graphs of this program are. For any serious share-portfolio handling you must be able to have a year's overview. That means being able to present a graph covering 250 bank working days a year minus some official holidays.

As there are some so-called *cyclic shares* you must be able to view the share price development over a long period – preferably two years.

From correspondence I had with Silicon Vision, the program does not cater for private persons. A shareholder must be capable of choosing what will be the fiscal year and capital and incomes must not be mixed.

In addition you must have the facility to input the tax rate for every single share – it is not always 25 per cent – and in many countries the costs incurred to receive the dividend are deductible, while the calculator and calendar tools leave a lot to be desired. You are also limited in the amounts you can enter.

The basic idea of the program is good but in practice it's only useful to teach children the elementary basics about the stock market. – **Jan van Vredenburch, Luzern, Switzerland**

● *While I am impressed by your diligence and agree that the data in the screen shots is odd, I can assure you that you are wrong in concluding that Shareholder commits arithmetic errors in its calculations.*

As I did not wish the actual parameters of my own portfolio to be published I made random alterations to figures to create junk data. The screen shots are intended as examples of the data handling capabilities.

Shareholder operates rationally and in the second illustration certain fields have been updated from separate records (not shown) relating to the addition and disposal of one extra share.

You may wonder why anyone should want to buy and then sell one extra share at widely differing prices. This is a fictional transaction to achieve the effect of updating the portion when a second tranche payment is made.

Privatisation issues, like PowerGen in the example, are paid for in two or three separate tranches. Shareholder does not provide a satisfactory way of handling such transactions and I have had to use this fix. To apply it correctly

Masterful present

I HAVE recently been given a second-hand BBC Master for my birthday and I would be very grateful if you could tell me if it is possible to use it to (safely) switch on and off a table lamp or cassette player, perhaps using a relay.

Are there any companies selling hardware/software for the 8-bit machine and are there any *support* clubs or groups like the Arm Club for the Archimedes? I am particularly interested in getting a copy of the game *Red Arrows*.

With the computer came a rom holder in one of the cartridge slots which contained Word-Aid. Where can I find information about this and the holder?

The holder has four sockets and two switches on the side. I want to use another rom in it but can't get both roms to register at the same time – I have to change the switches to alter which rom is recognised.

Finally how can I disable the internal speaker? – **Robin Moffatt, Sheffield**

● *As far as using your Master to control a relay is concerned we have passed your letter on to Mike Cook, however your other points are easily answered:*

There are no commercial companies that support the 8-bit machines any more except in the area of education and very few new programs are being written. Support groups do exist and if any would like to write in we'll pass your letters on to Robin.

If you take a look at the PD Pages in this issue you'll find a list of 8-bit PD houses which have big catalogues of software that you can get for very low prices.

*Word-Aid was written specifically to support the word processor Wordwise Plus which may be in the machine in the internal socket – you can check this out by typing *ROMS followed by Return.*

The mention of Red Arrows certainly brings back memories – it was so accurate that only the Red Arrows team themselves were able to fly it properly. If anyone has a copy of it that they're willing to part with we'll pass on a message to Robin.

The rom cartridge doesn't sound familiar so I'm afraid we can't help you on that one. The easiest way to disable the speaker permanently is to open up the machine and unplug it.

the price per share should be updated.

The graphing facilities are also inadequate and said so in my article.

I would disagree with your later points though, as Shareholder does treat costs in the way private clients prefer – as inclusion in the amount invested. There is no provision in Shareholder to enter a fiscal period but you are entitled to run the software over whatever accounting period you choose.

Neither does Shareholder3 confuse capital and interest and it doesn't add dividends to the investment. The use of the term tax credit *is exactly in conformity with UK and Inland Revenue practice. If you enter either the net or gross dividend the software will calculate the other.*

You can also set the tax rate for every share. There is a default but this can be overwritten for a single share – say a foreign holding – or globally if tax rates change.

There are some limitations with Shareholder3, particularly when it comes to handling restructuring, script issues and other arcana of company finance. Earlier versions of Shareholder were unsatisfactory, calculating dealing costs wrongly for instance. If your experience is based on earlier versions I sympathise but Shareholder3 is far better and I stand by my endorsement of it. ***Clem Vogler***

Tele-adaptation

WHERE can I get a Teletext adapter for my A3010? I have looked at the Morley Electronics one, but it doesn't seem to be of good value. Ground Control seem to have disappeared. Any ideas? – **Stephen Ross, Cranleigh, Surrey**

● *According to our investigations Ground Control have indeed disappeared – unless someone can inform us to the contrary – which means that if you want Teletext you have to use Morley. There is alternative software for the Morley adapter from The Really Good Software Company, but that adds to the cost of course.*

Driven to a hard disk

I HOPE you can help me. I want to get a hard disk drive for my computer. I cannot afford a new one as I would have to save for about a year to get a 30Mb one. Do you know of anyone or any place which has a hard disk I could buy?

I have an A3000, 2Mb ram, RISC OS 3.11 machine. I recently purchased Birds of War, and a seven disk game running from floppies is no joke. For one game I have to swap disks about 10-15 times.

Is it possible to get a 120Mb IDE internal hard disk for my A3000 for about £100. If not what about an 80Mb? – **Rob Donaldson, Stockport, Cheshire**

● *In this kind of situation it's best to peruse the adverts, as with hardware it's all much of a muchness. Try calculating Mb/£ for each product and see what comes out best – though I'm afraid you're unlikely to manage anything useful for £100. The companies to take a look at are Ian Copestake Software or RISC Developments. Another alternative is to keep an eye on the Classifieds as sometimes a real bargain will turn up.*

Moving up

COULD you please help me with the problem of upgrading? I currently have a BBC Master together with monitor, printer (Star NL-10) and twin drive. I have reached the limitations of this equipment and would now like to upgrade.

My question is: Should I stick with Acorn equipment and, if so, what machine should I go for? Although I like Acorn machines I am concerned at the lack of support in computer shops for Acorn – I usually get pitying smiles when I say I require Acorn-compatible software.

Although I enjoy playing games my major requirement is for a good database and word processing package, with a lesser need for DTP.

I have a budget of about £1500 and would like to get a decent monitor and printer. I have heard that Acorn are bringing out new machines – should I wait? – **Paul Davies, Reading, Berks**

● *To deal with your last question first, if people always waited for the next computer because it's better no one would ever buy one. The next machine will* always *be superior but you can spend your life waiting for it.*

The second point to remember is that we are biased, however our personal preference for Acorn machines is based on a knowledge of other systems not ignorance of them.

Yes, you should stick with Acorn and, given your requirements and resources, I would recommend the 2Mb A4000 Learning Curve with Super VGA monitor and 80Mb hard disk which is £1174 including VAT, and you can add 2Mb of ram for about £100. Your existing printer will work and you can upgrade at your leisure.

With the Learning Curve pack you get Advance (reviewed in our May 1993 issue) which contains a competent database, word processor, spreadsheet and charting packages as well as PC Soft with DR Dos 6 and some demonstration software.

As for the looks you get in the High Street stores, frankly you're better off working through dealers who understand the machine and will give support after purchase.

A cry for help

I HAVE been a subscriber to *Acorn Computing* for about a year but have only just purchased a 2Mb A3010 with Acorn colour monitor and Canon BubbleJet BJ-10sx printer.

After many hours with the manuals and audio tutorial tape, I realised that there is a lot to learn. It is a lot easier to be shown what to do by someone knowledgeable rather than relying on books. Is there any group, individual or company who could help? – **David F. Royle, Broadheath, Cheshire**

● *The first step would be to contact your local Acorn dealer. Many dealers conduct their own training courses which are usually free of charge if you bought your machine from them in the first place.*

Alternatively the Arm Club have tutorial days on various topics and specific packages but these are usually based around London.

More schools are having evening classes which take into account that not everyone in the universe uses PCs with WordPerfect. Contact your local school and if there is enough interest they can probably be persuaded to start a course.

Want to write to us?
The address is:
Letters, Acorn Computing, Europa House, Adlington Park, Macclesfield SK10 4NP.

SOFT . . . . . SECTOR

Tel: 0962 863225

UNBRANDED DISKS: SONY, VERBATIM, KAO, DYSAN etc.

(Subject to availability). 100% Certified Guaranteed Error Free

Packs of 10 supplied with FREE Library case

3.5" DSDD	£5.30	5.25" DSDD	£3.99
3.5" DSHD	£7.60 ~~£10.16~~	5.25" DSHD	£6.11

Labels included. Envelopes & labels included ***Enquiries welcome for bulk orders***

LOCKABLE DISK BOXES

50 Cap 5.25"	£6.75 each
100 Cap 5.25"	£7.99 each
40 Cap 3.5"	£6.25 each
80 Cap 3.5"	£6.95 each
100 Cap 3.5"	£7.75 each

ACCESSORIES

Library Cases 10 Cap 5.25"/3.5"	£1.20 each
Mouse Mats Red, Blue, Grey	£2.75 each
Disk Labels 3.5"	£1.40 per 100
Disk Labels 5.25"	£1.80 per 100
Disk Envelopes 5.25"	£3.65 per 100

200 Cap 3.5", File Drawer, Self Assembly £12.99

Printer Ribbons Toner cartridges – Original and Compatible – Ring for Prices

ALL PRICES INCLUDE VAT - NO EXTRA CHARGE FOR POSTAGE & PACKING

GOVERNMENT AND EDUCATIONAL ENQUIRIES WELCOME

SOFT SECTOR 58 Andover Road, Winchester, Hants SO22 6AG

ALPINE SOFTWARE

PO Box 25, Portadown, CRAIGAVON, BT63 5UT. Tel/Fax 0762 342510

Creator II is the latest version of our popular ***Arcade Games Designer***. We've spent over a year improving and expanding it and we're rather pleased with the result. It features animated sprites, music and sound effects, screen and map designers, paths, bargraphs, scroll text, starfields, platforms, ladders, doors, 100 page User Guide etc. So, whether you want to produce a fast-action blast, a challenging platform game, or even a cool demo, Creator II is what you need. What you don't need is programming experience! **£49**

Supporting products: Music Discs 1-5 £1.50 each, Sound FX Disc 1 and NEW Disc 2 £5.00 each, Sprites Disc £5.00, UltraSonic Music Editor £30.

Other products: ALPS adventure creator £34.95, ***Cyborg*** £25.95

NEW Adventure Collection £15, ***NEW Explorer*** educational space game £30.

Send a blank disc and 36p SAE for our ***NEW*** Product Guide/Demo disc.

Please add £1.00 towards postage & packing. (EC £2.50, Outside EC £4.50)

TMJ

TMJ Computer Software

39a Station Road, Desborough, Northants. NN14 2RL
Telephone/FAX: 0536 762713
Online BBS Darkhaven: 0604 413716 (24hrs)

What You See is What You Pay

AXIS	23.00	Guile	27.00	QUARK	23.00
Black Angel	31.00	Hero Quest	27.00	Stunt Racer 2000	33.00
Battle Chess	27.00	Heindall	27.00	Saloon Cars Deluxe	30.00
Break 147 & Superpool	30.00	Haunted House	23.00	Saloon Cars Xtra Courses	18.00
Birds of War	33.00	James Pond	23.00	Sim City	31.00
Carnage Inc.	23.00	JAMES POND 2 - RoboCod	24.00	The Dungeon	33.00
Chocks Away	22.00	Last Ninja	23.00	The Real McCoy 2,3,4 (ea)	26.00
Chocks Away Extra	18.00	Lemmings	23.00	Virtual Golf	33.00
Chocks Away Comp.	34.50	Lotus Turbo Challenge II	23.00	Xennon 2	23.00
Champions Compendium	27.00			ZOOL	23.00
Chopper Force	25.50	No VAT or P&P to add			
Chuck Rock	22.00				
Champions Comp.	26.00	Oh No! More Lemmings	18.00		
CRYSTAL MAZE	38.00	Omar Sharif's Bridge	27.00		
Cycloids	23.00	PHAETHON	24.00		
Demons Lair (2 Meg)	23.00	Populous	27.00		
Exotic Adv. of Sylvia Lane	23.00	Krysalis Compilation	27.00		
Elite Gold Edition	38.00	Manchester United Europe	23.00		
Ego : Repton 4	23.00	Master Break	17.00		
F.R.E.D.	18.00	Pandora's Box	23.00		
Gods	23.00	Plat it Again Sam 1,2,3	23.00		

DISCS

3.5 INCH DSDD	13 for 6.50
+ plastic wallet	7.25
3.5 inch HD Disc's	13 for 8.50
+ plastic wallet	9.25

Sound & Music

Digital Symphony	50.00
Notate	63.00
Rhapsody 2	53.00
Serenade	121.00
Desktop Tracker	63.00

□□□□□□ New Releases □□□□□□

Simon the Sorcerer	37.00
Sensible Soccer	23.00
Power Monger	27.00
Magic Pockets	23.00
LEMMINGS 2 - The Tribes	27.00

Citizen 120D /Swift 24/24E	4.50
Citizen Colour 9/24/24e/224	14.00
Epson LQ 4/500/550/850	4.50
H/P 500 Double Caps. Cart.	24.00
Colour Cart.	27.00
Cartridge refills	
H/P (Double)	15.00
Canon (Double)	13.50
A3000 Keyboard Dustcover	7.00
A3000 Keyboard & Monitor	10.00
A3010/3020 Keyboard only	7.00
14" Monitor Cover	7.00
14" milti-Scan Cover	7.00

Art & CAD

Artworks	164.00
Tracer	55.00
Illusionist	90.00
Revelation 2	125.00
SmArt	54.00
SmArt files (each)	38.00

Spreadsheets

Almanac	80.00
Home/Club Accounts	41.00

DTP

Advance	111.00
Impression Publisher	165.00
Impression Style	96.00
Pendown 2	57.00
Talking Pen Down	69.00
WORDZ (NEW)	105.00

Utilities

Compression	41.00
C.C. Turbo Driver	51.00
PC Emulator	114.00

Education

10/10 Maths/English/French	24.00
10/10 Early Ess/Algebra	24.00
10/10 Junior Ess/Statistics	24.00
Naughty Stories 2	55.00
Fun School 3, 4 (All Ages)	24.00
Noddies Play Time	24.00
Let's Spell (4 pack)	23.00

Ribbons & Covers

Acorn JP150 Cart.	23.00
KXP1080,1081,1180, 1123	4.50
STAR LC10 & NX1000	5.00
STAR LC10 Colour	13.75
STAR LC 200	4.50
STAR LC 200 Colour	13.75

Enjoy music! DIGITAL Masterpieces Albums 1&2 £12 each Inc friendly music player

PowerPad Single....£28 Dual.....£38 Uses printer port

All prices include VAT and P&P - Access and Visa Accepted
Open Mon-Fri 9.30 - 12.30, 1.30 - 5.30; Saturdays 9.30 - 2.00

Visit our new shop in Desborough! A3010 Learning curve & other products on display

Acorn COMPUTING

ADVERTISERS' INDEX

10/10 Software 39
1st Computer Centre 99
4 Mation 68
Aleph One Ltd ....OBC
Alpine 106
Apricote Studios 90
Armtech UK Ltd 58
Cambridgeshire S/W House 34
Castle Technology 50
Circle S/W 64
Colton Software ....IFC
Computer Concepts 20,30
Computer Depot 86,87
Contex Computing 100
Cumana Ltd 9
Dabhand Computing 103
Daco Systems 86,87
Davyn Computer Services 86,87
Dec Data Ltd 68
Desktop Projects 71
Digital Psychosis 68
Digital Services 25
Electronic Font Foundry 94
Fabis Computing 50
Focus It 41
Gamesware 45
Honormead 86,87
Ian Copestake Ltd 14,15,16,18
Illusions 50
Jumping Bean 41
Kettering ComputerCentre 86,87
Krisalis Software 74,75
Longman Logotron 23
Microtech 86,87
Morley Electronics 27
Network 23 90
Norwich Computer Services 58
Oak solutions 32
P.R.E.S. 92
Pineapple S/W 62
Renegade Software 77
Risc User ....IBC
Selective Computer Serv 86,87
Senlac 64
Sherston Software 7
Sibelius 61
Skyfall 50
Skyfall 53
Soft Sector 106
Superior Software 96
Technology Matrix 53
The Datastore 86,87
The Datastream 68
TMJ Computer Software 106
Turing Tools 100
Uniqueway 86,87
Vantage One Direct 12,13
Vertical Twist 37
Vipray Computer Supplies 86,87
Watford Electronics ....80 – 85
Wyddfa Software 50

The New Generation!

RISC User MAGAZINE

RISC User, the highly popular magazine for Archimedes, is bigger and better. The new RISC User is now B5 size, offering a sophisticated design, bigger colour illustrations and bigger pages with more information. Altogether better value and no increase in price.

RISC User is still a convenient size to assemble into an easy-to-use reference library, containing all the information you need as an Archimedes user. Every issue of RISC User offers a wealth of articles and programs with professionally written reviews, specific educational features, lively news help and advice for beginners and more experienced users.

RISC User has already established a reputation for accurate, objective and informal articles of real practical use to all users of Acorn's range of RISC computers.The new format provides a quality of presentation and format unmatched in the Acorn world. You can enjoy all that RISC User has to offer by taking out a subscription today.

MAJOR DISCOUNTS

RISC Developments is also well known for its range of professional software and hardware. As a RISC User subscriber you will receive at least 15% off RISC Developments software and 5% off RISC Developments hardware.

You can easily save the cost of your subscription in this way.

A year's subscription to RISC User is £19.90 for the first year and only £18.40 to renew thereafter (Overseas: Europe £29, Americas and Africa £38, Elsewhere £41). Taking out a subscription now could be the best decision you will ever make in ensuring that you get maximum benefit and enjoyment from your computer.

Phone or send your subscription to

RISC developments

RISC User, Subscriptions Department,
117 Hatfield Road, St Albans, Herts AL1 4JS,
Tel. 0727 840303, Fax 0727 860263,
(and quote reference A3).

RISC User MAGAZINE DISC

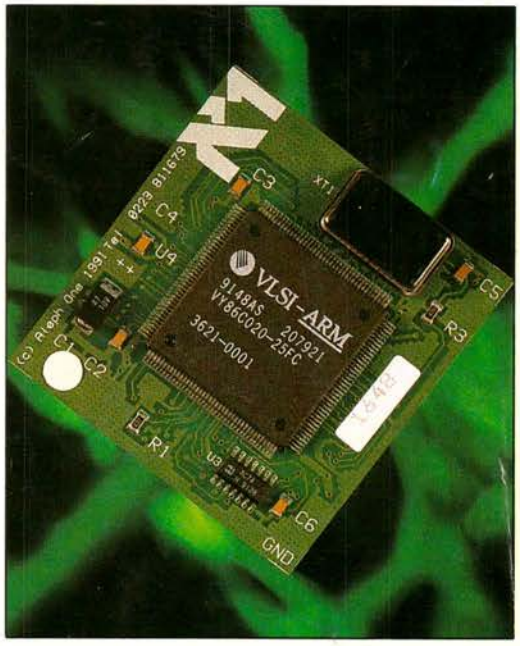
Disc supplied separately

The RISC User magazine disc is widely acknowledged to be the best magazine disc for Acorn computers. Each disc is filled with original software of the highest quality, fully tested and supported by our own staff plus all the programs from the magazine and other items from within the magazine pages.

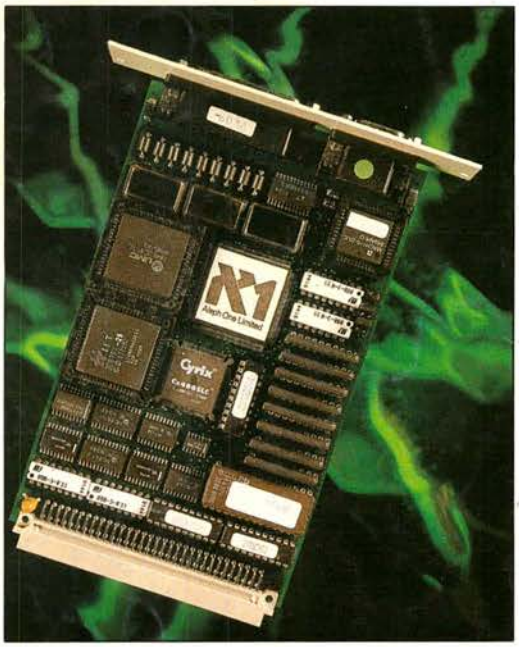
ARM3 SALE

Aleph One's latest ARM3 Upgrade for Archimedes A3000, A300- & 400-series computers uses robot assembly and surface mount technology for complete reliability. The 25MHz ARM3 CPU will speed RISC OS and its applications by as much as five times.

ARM3 Upgrades have never been so cheap, and probably never will be again. The RRP **including** VAT is now only £129.00, including postage. While our stocks last you can get a huge speed improvement in your older Acorn computers at a lower price then ever. You do need to have a MEMC1A in your machine; if it is an A305 or A310 or A440, without /1 at the end of the model number, then you will need this kit too. Both can be fitted by most people, provided you have a Chip Extractor Tool. We can supply these at £40, and if you send it back we will refund £35 to you. Atomwide Ltd will fit an ARM3 in an A3000 for you if you order from them.



ARM3 Upgrade	£109.79
MEMC1A Kit	£40.00
A3000 fitting	£ 28.00 (Atomwide)
Courier round-trip	£ 15.00 (Atomwide)



Aleph One PC Expansion Cards

For regular users of DOS and Windows the Aleph One PC Expansion Cards set the standard for high-performance functionality on the Archimedes.The 486 Card uses the 25MHz Cyrix 486SLC CPU, as used in many notebook computers, to give an impressive 6500 Dhrystones and a Norton System Index (ver. 5.0) of 40.5.

Owing to recent large increases in in the price of DRAM chips we now price these Cards in two parts, the base price for the 386 or 486 Card, which has not changed, and the price for RAM chips, which may vary up or down. Prices in September are shown below.

Our Windows Driver software upgrade uses the Archimedes CPU as a graphics co-processor for the PC, accelerating Windows displays by up to 20 times. Lightning fast graphics and smooth window movements result, simply by adding a single file to your Windows directory.

386PC-25MHz, no RAM	£375.00
486PC-25MHz, no RAM	£480.00
387 SX/SL-25 Coprocessor	£ 99.00
4MB RAM chip set £185.00	1MB RAM chip set £45.00
Windows Driver software	£ 25.00

All trademarks acknowledged. Prices exclude VAT. E&OE. September 1993

Aleph One Limited
The Old Courthouse
Bottisham
Cambridge
CB5 9BA
Tel 0223 811679
Fax 0223 812713

Aleph One Limited